# Eventide®

# *Eclipse*™

# Algorithms Manual

# Eclipse Algorithms Manual – Contents

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# Eclipse Algorithms Manual

## Introduction

Some perusal of this manual may aid in general understanding, and assist in 'tweaking' or customizing the factory presets – however, in-depth study of the operation of the algorithms is only necessary for those who wish to get the most from the unit by creating their own presets.

The rest of this manual assumes some understanding of the structure and components of signal processing based effects, but such understanding is not otherwise necessary for normal operation of the Eclipse. People who tend mainly to load and tweak the factory effects can skip the rest of this manual if they so wish.

Each Eclipse preset is made up of one or two *algorithms*. The word *algorithm* can be defined as a "way of doing something." In Eclipse, it is a way to produce an effect – a block of signal processing elements, such as mixers, shifters, compressors, etc. Each of the algorithms can be a powerful and sometimes complex effect in itself.

The factory presets numbered 100-199 should be viewed as examples of the algorithms, and can be used as sources of the 'un-tweaked' algorithm for preset creation. In some cases their names are subtly different from those of the underlying algorithms – this is usually for display or readability purposes. The corresponding preset for each algorithm is given in parentheses below the title e.g. *(6 Chorusdelays)*

Some algorithms have very many parameters, many of which rarely need to be changed in normal use. For this reason, the most important parameters are usually brought out to *hotkeys* to allow greater accessibility. The assignment and naming of *hotkeys* is covered in the ***Operators Manual***.

## General details applying to many algorithms

- ❏ With four voice stereo input delay and shifter effects, voices #1 and #3 are fed from the left input (channel #1), and voices #2 and #4 are fed from the right input (channel #2).

- ❏ All *LFOs* (Low Frequency Oscillators) may be re-triggered (synched) by an external audio source, by the front panel <TAP> button, MIDI 'start' commands or by MIDI BPM. These sources may be enabled from the modulation block (retrig) menu.

- ❏ all <t_parameters> signify *tap tempo* based rhythmic note value selection (dot 1/4, whole note, etc.) Hz, Sec, mS, etc. These are referenced from the global tempo, the 'modulation block' (taptime) parameters and external MIDIclock. Note that a 1/4 note is defined as the time between averaged <TAP> button hits.

- ❏ Many effects have a 'SEND' parameter - this is a link to automate the input signal remotely and can be set up as a 'send/volume pedal'. It will usually be connected to *external1* and in general acts as a master effect control.

- ❏ Many algorithms have an "S" somewhere in their signal path. That's the point at which the (SEND) or (MANUAL_P) level control operates.

- ❏ Unless noted otherwise, most delay times (delay and shifters) can be set to up to two seconds.

- ❏ Any pitch shift effect should be calibrated to the source signal. These effects can be program-material dependent, so some tweaking will often give better results, especially diatonic shifters, which usually need the key signature and scale to be specified.

- ❏ Any envelope/peak detector effect (including fm modulation effects) should be calibrated to the source material for the best results. This is usually a matter of adjusting for level and dynamics of the input signal.

- ❏ Any ADSR effect should be calibrated to the source material for best results. This is usually a matter of matching the dynamics of the input signal.

## *delays*

### m_banddelays

*(104   Banddelays )*

Four parallel delays with independent feedback paths feeding resonant bandpass filters. Tempo can be used to control delay time.

*Stereo in, stereo out*



**Parameters:**

#### *Masters*

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **m_Level** | *Scales all the individual delay levels, effectively serving as a master volume.* |
| **m_Delay** | *Scales all the individual delay times, effectively serving as a master delay (e.g. if the four delays are set to 200ms, 150ms, 100ms, and 50ms, setting M_Delay to 50% cuts those times in half (100ms, 75ms, 50ms, and 25ms)).* |
| **m_Freq** | *Scales all the individual band frequencies, effectively serving as a master frequency.* |
| **m_Q** | *Scales all the individual band Q's, effectively serving as a master Q. High values give high resonance, low values give low resonance.* |
| **m_Fback** | *Scales all the individual delay feedbacks, effectively serving as a master feedback (i.e. if M_Fback is set to 0%, all the delays will have no feedback, regardless of their individual settings. Alternatively, you could also have no feedback with M_Fback set to 100% if you set each delay's feedback parameter to 0%.).* |
| **m_Pan** | *Scales all the individual delay pans, effectively serving as an image spread control (i.e. if M_Pan is set to 0%, all the delays will be panned center, regardless of their individual settings).* |

#### *Delay#^(x = 1, 2, 3, or 4)*

| | |
|---|---|
| **Level x** | *Controls the level of delay x.* |
| **Delay x** | *Either reflects the physical delay time as entered by T_Delay x (given the current tempo) or allows you to enter the delay time in milliseconds.* |
| **T_Delay x** | *Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay control "off".* |
| **Freqx** | *Controls the frequency that delay x's bandpass filter ("Color") will center on.* |
| **Qx** | *Controls how sharp (resonant) said bandpass filter will be.* |

***Fback***      *Controls how much of delay x's output is reapplied to its input.*

***Panx***      *Controls where in the stereo field delay x will appear (negative values scoot it left and positive values scoot it right).*

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## m_bandtaps

*(105  Bandtaps)*

Four series-connected delays with bandpass filters feeding a stereo mixer. A wide range of feedback options allows rhythmically complex and colorful patterns to be quickly and easily created. Tempo may be used to control delay times.

*Summed in, stereo out*



## *Parameters*:

| Masters | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **m_Level** | *Scales all the individual delay levels, effectively serving as a master volume.* |
| **m_Delay** | *Scales all the individual delay times, effectively serving as a master delay (e.g. if the four delays are set to 200ms, 150ms, 100ms, and 50ms, setting M_Delay to 50% cuts those times in half (100ms, 75ms, 50ms, and 25ms)).* |
| **m_Freq** | *Scales all the individual band frequencies, effectively serving as a master frequency.* |
| **m_Q** | *Scales all the individual band Q's, effectively serving as a master Q. High values give high resonance, low values give low resonance.* |
| **Fback** | *Scales all the individual delay feedbacks, effectively serving as a master feedback (i.e. if Fback is set to 0%, all the delays will have no feedback, regardless of their individual settings. Alternatively, you could also have no feedback with M_Fback set to 100% if you set each delay's feedback parameter to 0%.).* |
| **Fb<tap#** | *Selects which of the four delays will provide the output for feedback (e.g. as shown in the diagram, delay 4 has been selected).* |
| **Fb>tap#** | *Selects where the feedback output should be "re-injected" (e.g. as shown in the diagram, the feedback output will be "re-injected" into the input of delay 3).* |
| **m_Pan** | *Scales all the individual delay pans, effectively serving as an image spread control (i.e. if M_Pan is set to 0%, all the delays will be panned center, regardless of their individual settings).* |

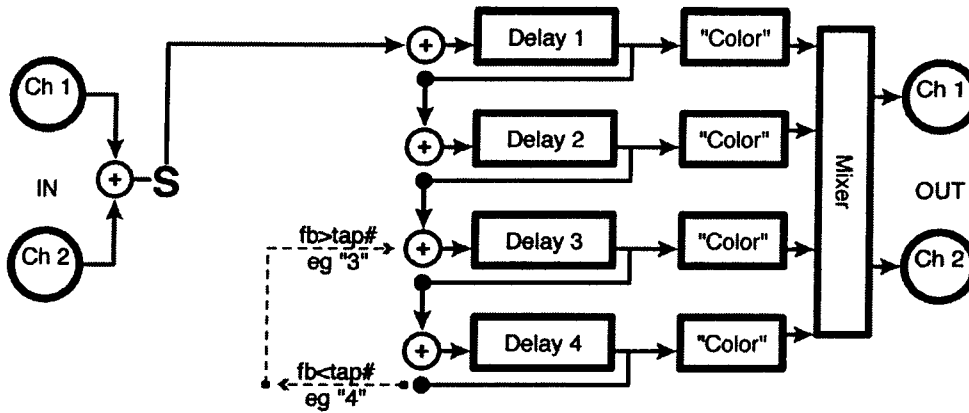| *Delays^(x = 1, 2, 3, or 4)* | |
|---|---|
| **Tapx** | *Either reflects the physical delay time of tap x as entered by T_Tap x (given the current tempo) or allows you to enter the delay time in milliseconds.* |
| **T_Tap x** | *Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay control "off".* |
| **Level x** | *Controls the level of delay x.* |
| **Pan x** | *Controls where in the stereo field the delay x output will appear. Negative values scoot it left and positive values scoot it right.* |

| *Filters^(x = 1, 2, 3, or 4)* | |
|---|---|
| **Freq x** | *Controls the frequency that delay x's bandpass filter ("Color") will center on.* |
| **Q x** | *Controls how sharp (resonant) said bandpass filter will be.* |

# m_chorusdelays

*(106   Chorusdelays)*

Four parallel delays with independent feedback paths feed choruses. Tempo can be used to control delay time and modulation rate.

*Stereo in, stereo out*

See "m_banddelays" above for diagram.

| *Masters* | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **m_Level** | *Scales all the individual delay levels, effectively serving as a master volume.* |
| **m_Delay** | *Scales all the individual delay times, effectively serving as a master delay (e.g. if the four delays are set to 200ms, 150ms, 100ms, and 50ms, setting M_Delay to 50% cuts those times in half (100ms, 75ms, 50ms, and 25ms)).* |
| **m_Rate** | *Scales all the individual delay sweep rates, effectively serving as a master rate.* |
| **m_Depth** | *Scales all the individual delay sweep depths, effectively serving as a master depth.* |
| **m_Fback** | *Scales all the individual delay feedbacks, effectively serving as a master feedback (i.e. if M_Fback is set to 0%, all the delays we have no feedback, regardless of their individual settings. Alternatively, you could also have no feedback with M_Fback set to 100% if you set each delay's feedback parameter to 0%.).* |
| **m_Pan** | *Scales all the individual delay pans, effectively serving as an image spread control (i.e. if M_Pan is set to 0%, all the delays will be panned center, regardless of their individual settings).* |
| **Retrig** | *Whenever the sweep rate is changed (either manually or by updating the tempo), the new rate is crossfaded with the old rate. The value of Retrig controls how long the crossfade is as a percentage of the old rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old rate.* |
| **Angle** | *Given most configurations of the Eclipse, the sweep rate will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the sweep begins.* |

| *Delay#1* | *(similarly 2, 3, and 4)* |
|---|---|
| **Level1** | *Controls the level of delay 1.* |
| **Delay1** | *Either reflects the physical delay time as entered by T_Delay1 (given the current tempo) or allows you to enter the delay time in milliseconds.* |
| **T_Delay1** | *Controls delay 1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay control "off".* |
| **Rate1** | *Controls the sweep rate for delay 1 if T_Rate1 is set to "off" or reflects the physical sweep rate as selected by T_Rate1 and the system tempo.* |

| | |
|---|---|
| **T_Rate1** | *Controls the sweep rate of delay 1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic sweep generation "off".* |
| **Depth1** | *Controls the sweep depth of delay 1.* |
| **Fback1** | *Controls how much of delay 1's output is reapplied to its input.* |
| **Pan1** | *Controls where in the stereo field delay 1 will appear (negative values scoot it left and positive values scoot it right).* |

## m_chorustaps

*(107  Chorustaps)*

Four series-connected delays with choruses feeding a stereo mixer. A wide range of feedback options allows rhythmically complex and colorful patterns to be quickly and easily created. Tempo may be used to control delay times and modulation rates

*Summed in, stereo out*

See "m_ bandtaps" above for diagram

### Masters

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **m_Level** | *Scales all the individual delay levels, effectively serving as a master volume.* |
| **m_Delay** | *Scales all the individual delay times, effectively serving as a master delay (e.g. if the four delays are set to 200ms, 150ms, 100ms, and 50ms, setting M_Delay to 50% cuts those times in half (100ms, 75ms, 50ms, and 25ms)).* |
| **m_Rate** | *Scales all the individual delay sweep rates, effectively serving as a master rate.* |
| **m_Depth** | *Scales all the individual delay sweep depths, effectively serving as a master depth.* |
| **Fback** | *Scales all the individual delay feedbacks, effectively serving as a master feedback (i.e. if Fback is set to 0%, all the delays will have no feedback, regardless of their individual settings. Alternatively, you could also have no feedback with M_Fback set to 100% if you set each delay's feedback parameter to 0%.).* |
| **Fb<tap#** | *Selects which of the four delays will provide the output for feedback (e.g. as shown in the diagram, delay 4 has been selected).* |
| **Fb>tap#** | *Selects where the feedback output should be "reinjected" (e.g. as shown in the diagram, the feedback output will be "reinjected" into the input of delay 3).* |
| **m_Pan** | *Scales all the individual delay pans, effectively serving as an image spread control (i.e. if M_Pan is set to 0%, all the delays will be panned center, regardless of their individual settings).* |
| **Retrig** | *Whenever the sweep rate is changed (either manually or by updating the tempo), the new rate is crossfaded with the old rate. The value of Retrig controls how long the crossfade is as a percentage of the old rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old rate.* |
| **Angle** | *Given most configurations of the Eclipse, the sweep rate will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the sweep begins.* |

### Delays^(x = 1, 2, 3, or 4)

| | |
|---|---|
| **Tapx** | *Either reflects the physical delay time of tap x as entered by T_Tap x (given the current tempo) or allows you to enter the delay time in milliseconds.* |
| **T_Tap x** | *Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| **Level x** | *Controls the level of delay x.* |
| **Pan x** | *Controls where in the stereo field delay x will appear (negative values scoot it left and positive values scoot it right).* |

| | |
|---|---|
| **Rate x** | Controls the sweep rate for delay x if T_Ratex is set to "off" or reflects the physical sweep rate as selected by T_Ratex and the system tempo. |
| **T_Rate x** | Controls the sweep rate of delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic sweep generation "off". |
| **Depth x** | Controls the sweep depth of delay x. |

# m_combdelays

*(108   Combdelays)*

Four parallel delays with independent feedback paths feed resonators. Tempo can be used to control delay time.
*Stereo in, stereo out*

See "m_banddelays" above for diagram.

**Masters**

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **m_Level** | Scales all the individual delay levels, effectively serving as a master volume. |
| **m_Delay** | Scales all the individual delay times, effectively serving as a master delay (e.g. if the four delays are set to 200ms, 150ms, 100ms, and 50ms, setting M_Delay to 50% cuts those times in half (100ms, 75ms, 50ms, and 25ms)). |
| **m_Cmix** | Scales all the individual delay "comb-to-dry" ratios, effectively serving as a master "comb-to-dry" ratio. |
| **m_Comb** | Scales all the individual delay comb depths, effectively serving as a master comb depth. Changing the comb depth changes the timbre of the effect. |
| **m_Decay** | Scales all the individual delay comb "resonances", effectively serving as a master decay. |
| **m_Fback** | Scales all the individual delay feedbacks, effectively serving as a master feedback (i.e. if M_Fback is set to 0%, all the delays will have no feedback, regardless of their individual settings. Alternatively, you could also have no feedback with M_Fback set to 100% if you set each delay's feedback parameter to 0%.). |
| **m_Pan** | Scales all the individual delay pans, effectively serving as an image spread control (i.e. if M_Pan is set to 0%, all the delays will be panned center, regardless of their individual settings). |

**Delay#1**

| | |
|---|---|
| **Level1** | Controls the level of delay 1. |
| **Delay1** | Either reflects the physical delay time as entered by T_Delay1 (given the current tempo) or allows you to enter the delay time in milliseconds. |
| **T_Delay1** | Controls delay 1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off". |
| **CMix1** | Controls the "comb-to-dry" ratio for delay line 1. |
| **Comb1** | Controls the comb depth for delay line 1; adjusts the timbre of the effect. |
| **Decay1** | Controls the comb "resonance" for delay line 1. |
| **Fback** | Controls how much of delay 1's output is reapplied to its input. |
| **Pan1** | Controls where in the stereo field delay 1 will appear (negative values scoot it left and positive values scoot it right). |

## m_combtaps

*(109   Combtaps)*

Four series-connected delays with resonators feeding a stereo mixer. A wide range of feedback options allows rhythmically complex and colorful patterns to be quickly and easily created. Tempo may be used to control delay times.

*Summed in, stereo out*

See "m_ bandtaps" above for diagram.

### Masters

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **m_Level** | Scales all the individual delay levels, effectively serving as a master volume. |
| **m_Delay** | Scales all the individual delay times, effectively serving as a master delay (e.g. if the four delays are set to 200ms, 150ms, 100ms, and 50ms, setting M_Delay to 50% cuts those times in half (100ms, 75ms, 50ms, and 25ms)). |
| **m_Cmix** | Scales all the individual delay "comb-to-dry" ratios, effectively serving as a master "comb-to-dry" ratio. |
| **m_Comb** | Scales all the individual delay comb depths, effectively serving as a master comb depth. Changing the comb depth changes the timbre of the effect. |
| **m_Decay** | Scales all the individual delay comb "resonances", effectively serving as a master decay. |
| **Fback** | Scales all the individual delay feedbacks, effectively serving as a master feedback (i.e. if Fback is set to 0%, all the delays will have no feedback, regardless of their individual settings. Alternatively, you could also have no feedback with M_Fback set to 100% if you set each delay's feedback parameter to 0%.). |
| **Fb<tap#** | Selects which of the four delays will provide the output for feedback (e.g. as shown in the diagram, delay 4 has been selected). |
| **Fb>tap#** | Selects where the feedback output should be "reinjected" (e.g. as shown in the diagram, the feedback output will be "reinjected" into the input of delay 3). |
| **m_Pan** | Scales all the individual delay pans, effectively serving as an image spread control (i.e. if M_Pan is set to 0%, all the delays will be panned center, regardless of their individual settings). |

### Delays^(x = 1, 2, 3, or 4)

| | |
|---|---|
| **Tap x** | Either reflects the physical delay time of tap x as entered by T_Tap x (given the current tempo) or allows you to enter the delay time in milliseconds. |
| **T_Tap x** | Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off". |
| **Level x** | Controls the level of delay x. |
| **Pan x** | Controls where in the stereo field delay x will appear (negative values scoot it left and positive values scoot it right). |

### Combs^(x = 1, 2, 3, or 4)

| | |
|---|---|
| **Cmix x** | Controls the "comb-to-dry" ratio for delay line x. |
| **Comb x** | Controls the comb depth for delay line x; adjusts the timbre of the effect. |
| **Decay x** | Controls the comb "resonance" for delay line x. |

## m_ringdelays

*(112   Ringdelays)*

Four parallel delays with independent feedback paths feed frequency shifters (single sideband ring modulation). Tempo may be used to control delay times and ringing.
*Stereo in, stereo out*

See "m_banddelays" above for diagram.

### Masters

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **m_Level** | *Scales all the individual delay levels, effectively serving as a master volume.* |
| **m_Delay** | *Scales all the individual delay times, effectively serving as a master delay (e.g. if the four delays are set to 200ms, 150ms, 100ms, and 50ms, setting M_Delay to 50% cuts those times in half (100ms, 75ms, 50ms, and 25ms)).* |
| **m_Fback** | *Scales all the individual delay feedbacks, effectively serving as a master feedback (i.e. if M_Fback is set to 0%, all the delays will have no feedback, regardless of their individual settings Alternatively, you could also have no feedback with M_Fback set to 100% if you set each delay's feedback parameter to 0%.).* |
| **m_Pan** | *Scales all the individual delay pans, effectively serving as an image spread control (i.e. if M_Pan is set to 0%, all the delays will be panned center, regardless of their individual settings).* |
| **m_Rmix** | *Scales all the individual delay "ring-to-dry" ratios, effectively serving as a master "ring-to-dry" ratio.* |
| **m_Ring** | *Scales all the individual delay ring depths, effectively serving as a master ring depth. Changing the ring depth changes the timbre of the effect.* |

### Delay#1

| | |
|---|---|
| **Level1** | *Controls the level of delay 1.* |
| **Delay1** | *Either reflects the physical delay time as entered by T_Delay1 (given the current tempo) or allows you to enter the delay time in milliseconds.* |
| **T_Delay1** | *Controls delay 1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| **RMix1** | *Controls the "ring-to-dry" ratio for delay line 1.* |
| **Ring1** | *Either reflects the physical ring depth as entered by T_Ring1 (given the current tempo) or allows you to enter the ring depth in Hz.* |
| **T_Ring1** | *Controls ring depth 1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic ring depth generation "off".* |
| **Fback** | *Controls how much of delay 1's output is reapplied to its input.* |
| **Pan1** | *Controls where in the stereo field delay 1 will appear (negative values scoot it left and positive values scoot it right).* |

## m_ringtaps

*(113  Ringtaps)*

Four series-connected delays with frequency shifters feeding a stereo mixer. A wide range of feedback options allows rhythmically complex and colorful patterns to be quickly and easily created. Tempo may be used to control delay times and ringing.

*Summed in, stereo out*

See "m_bandtaps" above for diagram.

| Masters | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **m_Level** | *Scales all the individual delay levels, effectively serving as a master volume.* |
| **m_Delay** | *Scales all the individual delay times, effectively serving as a master delay (e.g. if the four delays are set to 200ms, 150ms, 100ms, and 50ms, setting M_Delay to 50% cuts those times in half (100ms, 75ms, 50ms, and 25ms)).* |
| **m_Rmix** | *Scales all the individual delay "ring-to-dry" ratios, effectively serving as a master "ring-to-dry" ratio.* |
| **m_Ring** | *Scales all the individual delay ring depths, effectively serving as a master ring depth. Changing the ring depth changes the timbre of the effect.* |
| **Fback** | *Scales all the individual delay feedbacks, effectively serving as a master feedback (i.e. if Fback is set to 0%, all the delays will have no feedback, regardless of their individual settings. Alternatively, you could also have no feedback with M_Fback set to 100% if you set each delay's feedback parameter to 0%.).* |
| **Fb<tap#** | *Selects which of the four delays will provide the output for feedback (e.g. as shown in the diagram, delay 4 has been selected).* |
| **Fb>tap#** | *Selects where the feedback output should be "reinjected" (e.g. as shown in the diagram, the feedback output will be "reinjected" into the input of delay 3).* |
| **m_Pan** | *Scales all the individual delay pans, effectively serving as an image spread control (i.e. if M_Pan is set to 0%, all the delays will be panned center, regardless of their individual settings).* |

| Delays^(x = 1, 2, 3, or 4) | |
|---|---|
| **Tap x** | *Either reflects the physical delay time of tap x as entered by T_Tap x (given the current tempo) or allows you to enter the delay time in milliseconds.* |
| **T_Tap x** | *Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| **Level x** | *Controls the level of delay x.* |
| **Pan x** | *Controls where in the stereo field the delay x output will appear (negative values scoot it left and positive values scoot it right).* |

| Rings^(x = 1, 2, 3, or 4) | |
|---|---|
| **Rmix x** | *Controls the "ring-to-dry" ratio for delay line 1.* |
| **Ring1** | *Either reflects the physical ring depth as entered by T_Ringx (given the current tempo) or allows you to enter the ring depth in Hz.* |
| **T_Ring x** | *Controls ring depth x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic ring depth generation "off".* |

# m_pandelays

*(114  Pandelays)*

Four parallel delays with independent feedback paths may be panned across the stereo output. Tempo may be used to control delay times and pan sweep rates.
*Stereo in, stereo out*

See "m_banddelays" above for diagram and parameters.

### Masters

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **m_Level** | *Scales all the individual delay levels, effectively serving as a master volume.* |
| **m_Delay** | *Scales all the individual delay times, effectively serving as a master delay (e.g. if the four delays are set to 200ms, 150ms, 100ms, and 50ms, setting M_Delay to 50% cuts those times in half (100ms, 75ms, 50ms, and 25ms)).* |
| **m_Fback** | *Scales all the individual delay feedbacks, effectively serving as a master feedback (i.e. if M_Fback is set to 0%, all the delays will have no feedback, regardless of their individual settings. Alternatively, you could also have no feedback with M_Fback set to 100% if you set each delay's feedback parameter to 0%.).* |
| **m_Rate** | *Scales all the individual delay pan rates, effectively serving as a master rate.* |
| **m_Depth** | *Scales all the individual delay pan depths, effectively serving as a master depth.* |
| **Retrig** | *Whenever the pan rate is changed (either manually or by updating the tempo), the new rate is cross-faded with the old rate. The value of Retrig controls how long the cros-sfade is as a percentage of the old rate. Thus, a value of 100% means that the cross-fade will be complete in one cycle of the old rate.* |
| **Angle** | *Given most configurations of the Eclipse, the pan rate will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the sweep begins.* |

### Delay#1          (similarily 2,3,4)

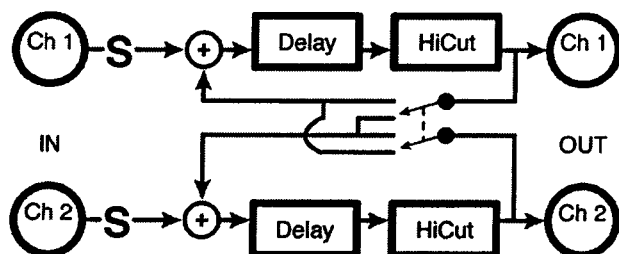| | |
|---|---|
| **Level1** | *Controls the level of delay 1.* |
| **Delay1** | *Either reflects the physical delay time as entered by T_Delay1 (given the current tempo) or allows you to enter the delay time in milliseconds.* |
| **T_Delay1** | *Controls delay 1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| **Fback** | *Controls how much of delay 1's output is reapplied to its input.* |
| **Rate1** | *Controls the pan rate for delay 1 if T_Rate1 is set to "off" or reflects the physical pan rate as selected by T_Rate1 and the system tempo.* |
| **T_Rate1** | *Controls the pan rate of delay 1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic pan generation "off".* |
| **Depth1** | *Controls the pan depth of delay 1.* |

## st chorus delays

*(115   St Chorus)*

Dual modulating delays with various feedback options are followed by a hi-cut filter. Tempo may be used to control the delay's sweep rate. Each delay may be set at up to two seconds, allowing longer delay times than similar effects. The left and right channels sweep in opposition.

*Stereo in, stereo out*



### Delays

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **Level** | Controls the output levels of both delays. |
| **Delay1** | Controls the delay time of delay 1 in milliseconds (no tempo function is available - this is a chorus effect, after all). |
| **Delay2** | Controls the delay time of delay 2 in milliseconds. |
| **Depth1** | Controls the depth of modulation for delay 1. |
| **Depth2** | Controls the depth of modulation for delay 2. |
| **Hicut** | Controls the lowpass filter cutoff frequency. |
| **Fback** | Controls how much of each delay's output gets reapplied to its own input or to the other delay's input. |
| **FB Type** | Determines if the feedback from each delay will return to its own input or to the other delay's input. |
| **Image** | Controls how wide the stereo chorus image is. |

### LFO

| | |
|---|---|
| **Rate** | Controls the modulation rate if T_Rate1 is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo. |
| **T_Rate** | Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation control "off". |
| **Shape** | Determines the shape of the modulating signal. |
| **Duty** | Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall). |
| **Polarity** | When set to "unipolar", modulations add the value of Depth to Delay. When set to "bipolar", modulations add the value of Depth to Delay and subtract the value of Depth from Delay. |
| **Retrig** | Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate. |
| **Angle** | Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins. |

## ducked delays

*(116   DuckedDelays)*

Two delay lines followed by a stereo compressor whose side-chain is fed by a sum of chan#1 and #2. Volume ducks/compresses delays out of the way. Be careful with compressor gain! Tempo may be used to control delay times.

*Stereo in, stereo out*
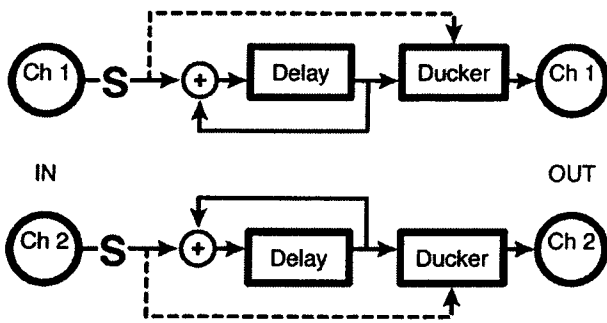


| Delay | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **Level** | Controls the output levels of both delays. |
| **Delay1** | Either reflects the physical delay time as entered by T_Delay1 (given the current tempo) or allows you to enter the delay time in milliseconds. |
| **Delay2** | Either reflects the physical delay time as entered by T_Delay2 (given the current tempo) or allows you to enter the delay time in milliseconds. |
| **T_Delay1** | Controls delay 1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off". |
| **T_Delay2** | Controls delay 2 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off". |
| **Fback1** | Controls how much of delay 1's output is reapplied to its input. |
| **Fback2** | Controls how much of delay 2's output is reapplied to its input. |
| **Image** | Controls how wide the delay image is. |

| Ducking | |
|---|---|
| **Thresh** | Sets the input threshold above which compression of the delay signal takes place and below which the delay signal is left alone. |
| **Ratio** | Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input. |
| **Gain** | Adjusts the output level to improve gain structure. |
| **Attack** | Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold. |
| **Decay** | Controls how quickly the compressor "lets go" of a signal once it falls below the threshold. |
| **GR 1** | Displays how much gain reduction (compression) is taking place after delay 1. |
| **GR 2** | Displays how much gain reduction (compression) is taking place after delay 2. |

## ultratap 2

*(117   Ultratap 2)*

This extension of a popular Eventide H3000 structure contains four serial two-second diffusors feeding a 36 tap, two-second *multitap* delay (*easytaps* below) and a tempo-controlled two-second feedback delay. It is great for pre-reverb or strange delay/reverberant effects.

*Summed in, stereo out*
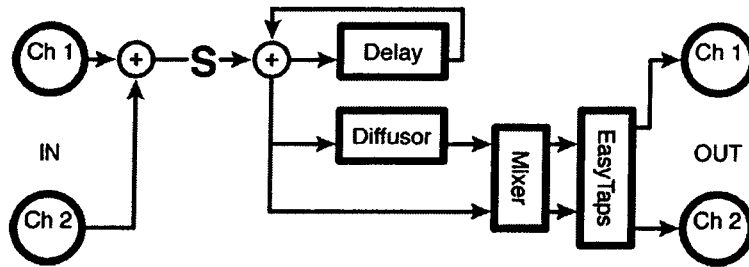
### Diffusor^(x = 1, 2, 3, 4)

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **Dmix** | *Controls the amount of diffusion.* |
| **Coef x** | *Controls the amount of feedback for diffusor x, which determines the "fuzziness" or "distinctness" of the diffusor.* |
| **Diffusion** | *A master feedback control for all the diffusors.* |
| **DSize** | *Controls the diffusor's "size" by scaling its delay times.* |
| **Delay x** | *Controls the total delay time for diffusor x.* |

### Multitap

| | |
|---|---|
| **Level** | *Controls the output level of the multitap delay.* |
| **FBDelay** | Controls the delay time of the feedback delay. |
| **T_FBDela** | *Controls the feedback delay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| **Fback** | The amount of feedback applied to the feedback delay. |
| **# Taps** | *Specifies the number of delay taps that the algorithm will use.* |
| **Length** | *Controls the total delay length.* |
| **Random** | *Controls the degree to which the Eclipse randomizes tap times to reduce resonance.* |
| **DlyShape** | *Controls the delay "shape" or tap length as a function of tap number.* |
| **AmpShape** | *Controls the amplitude "shape" or the level of each of tap as a function of tap number.* |
| **PanShape** | *Controls the pan "shape" or the panning of each tap as a function of tap number.* |
| **AAlpha** | *Controls the exponential shape of the amplitude only when AmpShape is set to "exp_inc" or "exp_dec".* |
| **DAlpha** | *Controls the exponential shape of the tap times only when DlyShape is set to "exp_inc" or "exp_dec".* |

## mono loop (10)

*(118   Loop10)*

This version of "mono loop (20)" is suitable for use at 96kHz sampling.
*Summed in, stereo out*

See "mono loop (20)" above for diagram and parameters.

## mono loop (20)

*(119   Loop20)*

This simple effect contains a mono 20-second delay with hi-cut filter and pan. Tempo may be used to control delay times.
*Summed in, stereo out*



### Loops

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **Level** | *Controls the output level of the loop.* |
| **Loop** | *Either reflects the physical loop time as entered by T_Loop (given the current tempo) or allows you to enter the loop time in milliseconds.* |
| **T_Loop** | *Controls the length of the loop in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic loop generation "off".* |
| **Hicut** | *Controls the lowpass filter cutoff frequency.* |
| **Pan** | *Pans the loop in the stereo field.* |
| **Loop** | *Monitors the input to the loop* |

# dual loops (5)

*(120   DualLoop5)*

This version of "dual loops (10)" is suitable for use at 96kHz sampling.
*Stereo in, stereo out*

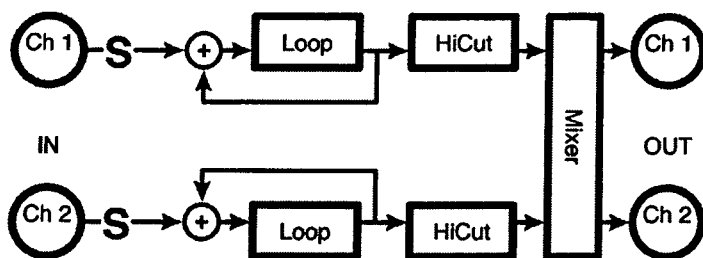See "dual loops (10)" above for diagram and parameters.

# dual loops (10)

*(121   DualLoop10)*

A true stereo version of "mono loop (20)."
*Stereo in, stereo out*



| Master | |
| --- | --- |
| Send | Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| Level | Controls the output level of both loops. |
| Loop | Either reflects the physical loop time of both loops as entered by T_Loop (given the current tempo) or allows you to enter the loop time in milliseconds. |
| T_Loop | Controls the length of both loops in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic loop generation "off". |
| Fback | Controls how much of each loop's output is reapplied to its input or the other loop's input. |
| FB Type | Determines if the feedback from each loop will return to its own input or to the other loop's input. |
| Hicut | Controls the lowpass filter cutoff frequency. |
| Image | Controls how wide the loop image is. |
| Loop1 | Monitors the input to loop 1. |
| Loop2 | Monitors the input to loop 2. |

| Loop#1 |
| --- |

*Parameters similar to those described under "Mono Loop" above, dedicated to Loop 1; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

| Loop#2 |
| --- |

*Parameters similar to those described under "Mono Loop" above, dedicated to Loop 2; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

## mono reverse (20)

*(122   Reverse10)*

This algorithm is a mono 20-second *reverse delay*. A *reverse delay* is unique in that the <tap> button or other trigger source can both set the delay time and trigger playback from the unit.. This means that the first button press starts filling the delay, while the second press starts backwards playback. Think of it as a reverse sampler or looper. Tempo may be used to control delay times.
*Summed in, stereo out*
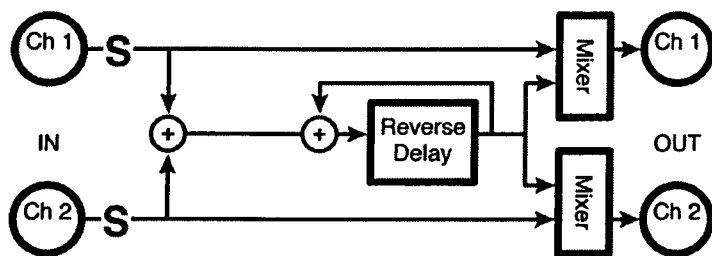


### Reverse

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **Mix** | Controls the wet-to-dry ratio. If set to "0%", you won't hear any effect, while if set to "100%" you'll hear nothing *but* effect. |
| **Delay** | Either reflects the physical reverse time as entered by T_Delay (given the current tempo) or allows you to enter the reverse time in milliseconds. |
| **T_Delay** | Controls the length of the reverse in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic reverse generation "off". |
| **Regen** | Controls the feedback around the Reverse Delay, i.e. how much of its output is reapplied to its input. |
| **XFade** | Controls the length of crossfade between successive samples (reversed chunks). |
| **Mute** | Sets the delay time below which the reverse output will be muted (prevents tempo changes from creating a ridiculously short reverse loop). |
| **Trigger** | Causes reversed playback to start immediately. |

## mono reverse (10)

*(123   Reverse20)*

This version of "mono reverse (20)" is suitable for use at 96kHz sampling.
*Summed in, stereo out*

See "mono reverse (20)" above for diagram and parameters.

## dual reverse (5)

*(124   DualReverse5)*

This five-second true stereo version of "mono reverse (20)" is suitable for use at 96kHz sampling.
*Stereo in, stereo out*

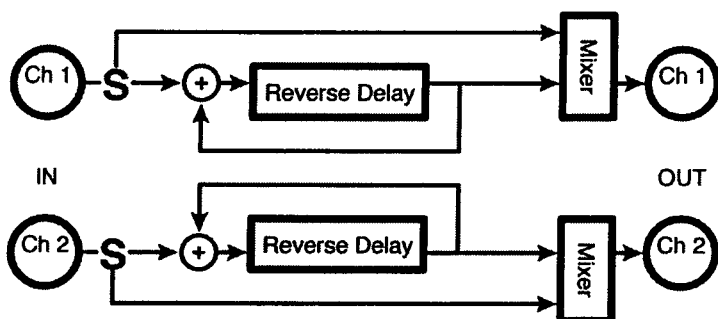See "dual reverse (10)" above for diagram and parameters.

## dual reverse (10)

*(125   DualReverse10)*

This is a 10-second true stereo version of "mono reverse (20)."
*Stereo in, stereo out*



| Master | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **Mix** | *Controls the wet-to-dry ratio. If set to "0%", you won't hear any effect. If set to "100%" you'll hear nothing but effect.* |
| **Delay** | *Either reflects the physical reverse time as entered by T_Delay (given the current tempo) or allows you to enter the reverse time in milliseconds if T_Delay is set to "Off".* |
| **T_Delay** | *Controls the length of the reverse in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic reverse generation "off". The actual reverse time displayed under Delay is a function of this control and the current system tempo.* |
| **Fback** | *Controls how much of the reverse's output is reapplied to its input.* |
| **Mute** | *Sets the delay time below which the reverse output will be muted (prevents tempo changes from creating a ridiculously short reverse loop).* |
| **XFade** | *Controls the length of crossfade between successive samples (reversed chunks).* |

| Rev#1 |
|---|

*Parameters similar to those described above, dedicated to Loop 1; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

| Rev#2 |
|---|

*Parameters similar to those described above, dedicated to Loop 2; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

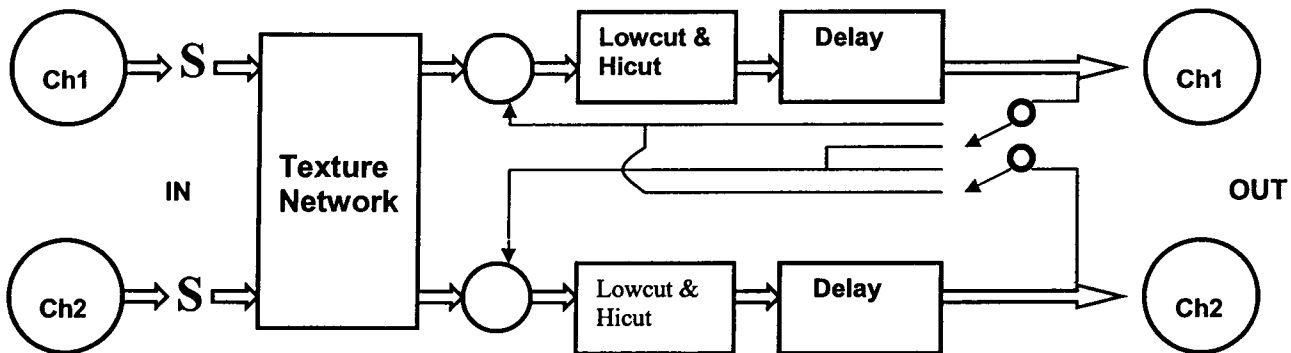| **Trigger** | *Causes reversed playback to start immediately.* |
|---|---|

## Vintage Delay

*(190   Vintage DDL)*

Early digital technology delays with steep lowcut and hicut filters in the feedback path and sound texture choice, introducing digital artifacts. Modulation and various feedback options are available. Tempo may be used to control the delay's sweep rate and time. Each delay may be set at up to two seconds. The left and right channels sweep in opposition.

*Stereo in, stereo out*



### Delays

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **Level** | Controls the output levels of both delays. |
| **Delay1** | Controls the delay time of delay 1 in milliseconds (no tempo function is available - this is a chorus effect, after all). |
| **Delay2** | Controls the delay time of delay 2 in milliseconds. |
| **T_Delay1** | Controls the length of delay1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic reverse generation "off". |
| **T_Delay2** | Controls the length of delay2 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic reverse generation "off". |
| **Depth1** | Controls the depth of modulation for delay 1. |
| **Depth2** | Controls the depth of modulation for delay 2. |
| **Hicut** | Controls the lowpass filter cutoff frequency. |
| **Fback** | Controls how much of each delay's output gets reapplied to its own input or to the other delay's input. |
| **FB Type** | Determines if the feedback from each delay will return to its own input or to the other delay's input. |
| **Image** | Controls how wide the stereo chorus image is. |
| **Texture** | Chooses between Modern audio quality and Vintage "digital artifacts" textures |

### LFO

| | |
|---|---|
| **Rate** | Controls the modulation rate if T_Rate1 is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo. |
| **T_Rate** | Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation control "off". |

*Shape* — Determines the shape of the modulating signal.

*Duty* — Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall).

*Polarity* — When set to "unipolar", modulations add the value of Depth to Delay. When set to "bipolar", modulations add the value of Depth to Delay and subtract the value of Depth from Delay.

*Retrig* — Whenever **Rate** is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate.

*Angle* — Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins

## dynamics

---

## dual compressors

*(126   StereoComp)*

A pair of independent "soft knee" compressors featuring 'master' and individual channel parameters as well as metering of gain reduction.

*Dual mono in, dual mono out*



| *Master* | |
|---|---|
| **Thresh** | *Sets the input threshold above which compression of the signal takes place and below which the signal is left alone.* |
| **S Knee** | *Controls the width of the "soft knee". The soft knee is a region above the threshold over which the ratio transitions from 1:1 to the selected Ratio. It smoothes out the compression.* |
| **Ratio** | *Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input.* |
| **Gain** | *Adjusts the output level to improve gain structure.* |
| **Attack** | *Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold.* |
| **Decay** | *Controls how quickly the compressor "lets go" of a signal once it falls below the threshold.* |
| **GR 1** | *Displays how much gain reduction (compression) is taking place after delay 1.* |
| **GR 2** | *Displays how much gain reduction (compression) is taking place after delay 2.* |

| *Comp#1* |
|---|

*Parameters similar to those described above, dedicated to compressor 1; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

| *Comp#2* |
|---|

*Parameters similar to those described above, dedicated to compressor 2; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

## dual noisegates

*(127  DualGates)*

This is a stereo noise gate with 'master' and individual channel parameters.
*Stereo in, stereo out*
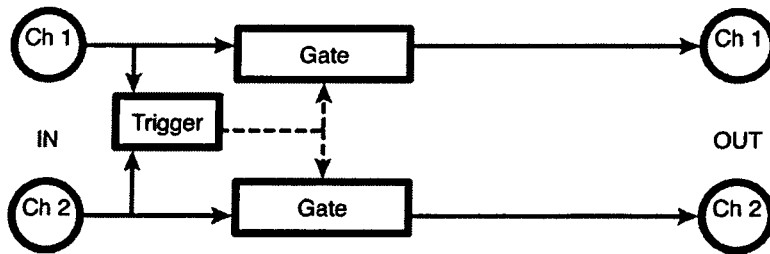


### Master

***Trigg***   *Selects which input or inputs trigger the gate to open.*

***Thresh***   *Sets the input threshold that the trigger must exceed to open the gate.*

***Attack***   *Controls how quickly the gate opens up once the trigger exceeds the threshold.*

***Decay***   *Controls how quickly the gate closes once the trigger falls below the threshold.*

***Hyster***   *Controls the "hysteresis": how far the trigger must fall below the threshold before the gate will open. Higher values prevent spurious triggering.*

***GT 1***   *Displays the dynamics of gate 1: if the bar is empty, the gate is closed. If the bar is full, the gate is open. Intermediate values represent varying levels of gain reduction.*

***GT 2***   *Displays the dynamics of gate 2: if the bar is empty, the gate is closed. If the bar is full, the gate is open. Intermediate values represent varying levels of gain reduction.*

### Gate#1

*Parameters similar to those described above, dedicated to gate 1; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

### Gate#2

*Parameters similar to those described above, dedicated to gate 2; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*
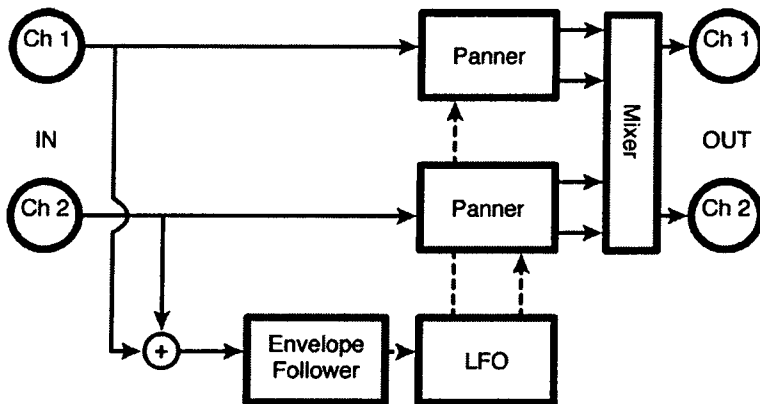
## fm panner

*(128 FM Panner)*

Simple panning with envelope-controlled fm modulation of sweep.
*Stereo in, stereo out*



### FM Pan

| | |
|---|---|
| *Send* | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| *Depth* | Amount of panning, relative to the output stereo field width. |
| *Width* | Actual width of output stereo field. |
| *Mode* | Determines if the effect will behave like a panner ("sync") or like a tremolo ("oppose"). |

### LFO

| | |
|---|---|
| *Rate* | Controls the modulation rate if T_Rate1 is set to "off". |
| *T_Rate* | Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off". |
| *FMRate* | Analogous to Rate, except that this pertains to modulation of the LFO's signal (not to modulation of the panner directly). |
| *T_FMRate* | Analogous to T_Rate, except that this pertains to modulation of the LFO's signal (not to modulation of the panner directly). |
| *Shape* | Determines the shape of the modulating signal. |
| *Duty* | Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall). |
| *Retrig* | Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate. |
| *Angle* | Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins. |

### Env

| | |
|---|---|
| *Sens* | Controls how sensitive the envelope follower is; alter this parameter to change the "depth" of the FM effect. |
| *Attack* | Controls how fast the envelope follower will track an increase in volume. |
| *Decay* | Controls how fast the envelope follower will track a decrease in volume. |

## fm trem

*(129   FM Trem)*

A simple tremolo with envelope-controlled fm modulation of sweep.
*Stereo in, stereo out*
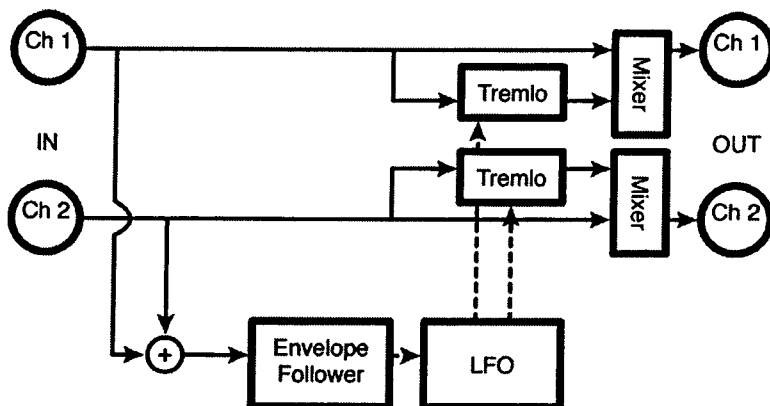


### FM Trem

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is the place to do it. No zippering allowed. |
| **Mix** | Controls the ratio between the dry and wet (tremolo) signal. |
| **Depth** | Controls the depth of the modulation. If Mix is at "0%", this effectively controls the volume. |
| **Mode** | Determines if the effect will behave like a tremolo ("sync") or like a panner ("oppose"). |

### LFO

| | |
|---|---|
| **Rate** | Controls the modulation rate if T_Rate1 is set to "off" or reflects the physical modulation rate as selected by T_Rate. |
| **T_Rate** | Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off". |
| **FMRate** | Analogous to Rate, except that this pertains to modulation of the LFO's signal (not to modulation of the tremolo directly). |
| **T_FMRate** | Analogous to T_Rate, except that this pertains to modulation of the LFO's signal (not to modulation of the tremolo directly). |
| **Shape** | Determines the shape of the modulating signal. |
| **Retrig** | Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate. |
| **Angle** | Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins. |

### Env

| | |
|---|---|
| **Sens** | Controls how sensitive the envelope follower is; alter this parameter to change the "depth" of the FM effect. |
| **Attack** | Controls how fast the envelope follower will track an increase in volume. |
| **Decay** | Controls how fast the envelope follower will track a decrease in volume. |

## *filters*

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## two band crossover

*(130   2BandXover)*

This two-band crossover includes pan parameters for the 'hi' and 'low' outputs for each channel.

*Stereo in, stereo out*
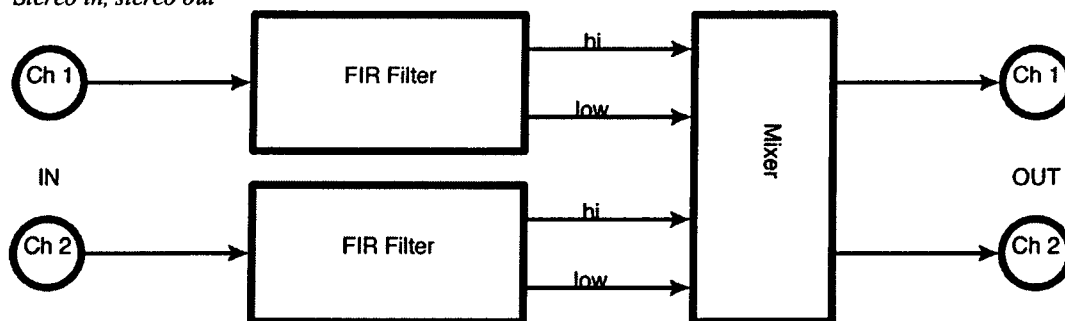


| X-Over | |
| --- | --- |
| **X-Over** | *Selects the frequency at which the crossover divides the signal.* |
| **Type** | *Selects the "windowing" type. In critical applications, A/B for best results.* |

| Mixer | |
| --- | --- |
| **Lows1** | *Controls the level of channel 1's low frequencies.* |
| **Highs1** | *Controls the level of channel 1's high frequencies.* |
| **Lows2** | *Controls the level of channel 2's low frequencies.* |
| **Highs2** | *Controls the level of channel 2's high frequencies.* |
| **Low1Pan** | *Controls where in the output stereo field channel 1's low frequencies end up.* |
| **Hi1Pan** | *Controls where in the output stereo field channel 1's high frequencies end up.* |
| **Low2Pan** | *Controls where in the output stereo field channel 2's low frequencies end up.* |
| **Hi2Pan** | *Controls where in the output stereo field channel 2's high frequencies end up.* |

## dual 4band para

*(131   Dual 4B Parametric)*

This stereo four-band equalizer has 'master' and individual channel parameters. In addition, band #1 is selectable between lowpass and bandpass, while band #4 can be either bandpass or highpass.
*Stereo in, stereo out*
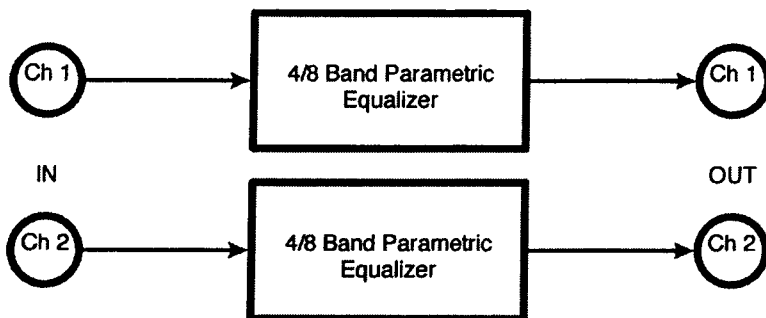


### Masters

#### Band#1

| | |
|---|---|
| *Level1* | Controls the boost or cut of band 1. |
| *Freq1* | Controls the center frequency or cut-off frequency of band 1. |
| *Q1* | Controls the bandwidth or resonance of band 1. |
| *Type1* | Controls whether band one behaves as a bandpass filter or as a lowpass filter (other bands are either dedicated bandpass filters or allow for highpass filtering as well). |

#### Band#2
Parameters similar to those described above, dedicated to band 2.

#### Band#3
Parameters similar to those described above, dedicated to band 3.

#### Band#4
Parameters similar to those described above, dedicated to band 4.

### EQ#1
*Parameters similar to those described above, dedicated to EQ 1; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

### EQ#2
*Parameters similar to those described above, dedicated to EQ 2; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

## dual 8 band EQ

*(132   Dual8Band Eq)*

This stereo eight-band equalizer has 'master' and individual channel parameters as well as a single bandwidth parameter.
*Stereo in, stereo out*

See "dual 4band para" above for diagram and parameters.

## dual filters

*(133   Dual Filters)*

This algorithm offers 'master' and individual channel parameters. The filter type may be selected from lowpass, hipass, bandpass or notch, while the slope may be either 24 or 48 dB per octave.
*Stereo in, stereo out*

```
  ┌──────┐         ┌──────────────────┐          ┌──────┐
  │ Ch 1 │────────▶│      Filter      │─────────▶│ Ch 1 │
  └──────┘         │  24 or 48 dB/oct │          └──────┘
                   │ low, hi, band, & notch │
     IN            └──────────────────┘            OUT
  ┌──────┐         ┌──────────────────┐          ┌──────┐
  │ Ch 2 │────────▶│      Filter      │─────────▶│ Ch 2 │
  └──────┘         │  24 or 48 dB/oct │          └──────┘
                   │ low, hi, band, & notch │
                   └──────────────────┘
```

### *Master*

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **Gain** | *Controls the output gain of the filters.* |
| **Freq** | *Controls the center frequency or cutoff frequency.* |
| **Q** | *Controls the bandwidth or resonance.* |
| **Type** | *Selects the type of filter.* |
| **Order** | *Selects the "steepness" of the filter.* |

### *Filter#1*

*Parameters similar to those described above, dedicated to Filter 1; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

### *Filter#2*

*Parameters similar to those described above, dedicated to Filter 2; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

## dual modfilters

*(134   Dual Modfilters)*

This modulated filter algorithm offers 'master' and individual channel parameters, with a 'mode' selector for modulation (one of *LFO*, envelope or pedal), as well as 'freq' and 'q' modulation. The envelope follower may be triggered from either input.
*Stereo in, stereo out*

| Master | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **Mode** | Selects whether the LFO, the envelope generator, or an external pedal will modulate the filters. |
| **Rate** | Controls the LFO modulation rate if T_Rate1 is set to "off" or reflects the physical LFO modulation rate as selected by T_Rate and the system tempo. |
| **T_Rate** | Controls the LFO modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic LFO modulation generation "off". |
| **Type** | Selects the type of filter. |
| **FAttack** | Controls how quickly the filter frequency will track an increase in the modulation source level. |
| **FDecay** | Controls how quickly the filter frequency will track a decrease in the modulation source level. |
| **QAttack** | Controls how quickly the filter Q will track an increase in the modulation source level. |
| **QDecay** | Controls how quickly the filter Q will track a decrease in the modulation source level. |
| **Freq** | Controls the "baseline" center frequency or cutoff frequency. |
| **Fmod** | Controls how far from the "baseline" the cutoff frequency will deviate in response to the modulation signal. |
| **Q** | Controls the "baseline" bandwidth or resonance. |
| **Qmod** | Controls how far from the "baseline" the Q will deviate in response to the modulation signal. |

| Env | |
|---|---|
| **Env** | Determines which input or inputs the envelope follower will track. |
| **Sens** | Controls how sensitive the envelope follower is; alter this parameter to change the "depth" of the FM effect. |
| **Retrig** | Whenever the LFO Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate. |
| **Angle** | Given most configurations of the Eclipse, LFO modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the LFO begins. |

---

**Filter#1**

*Most parameters similar to those described above, dedicated to Filter 1; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*
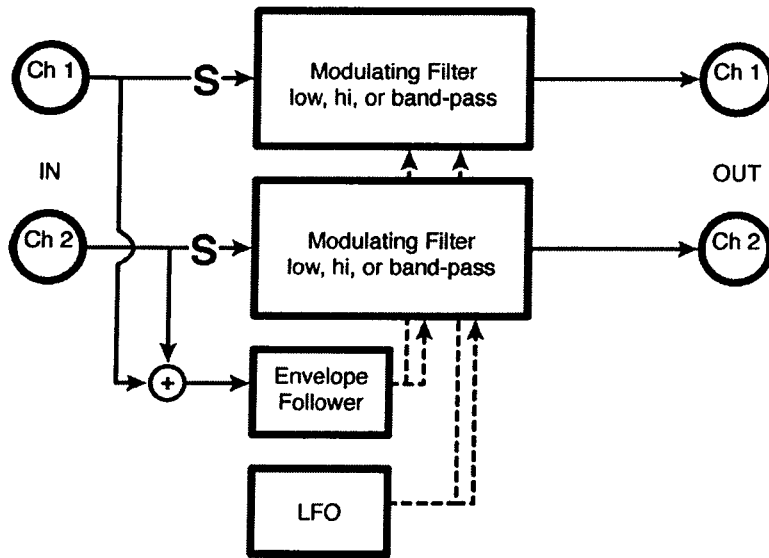
**Man_Ped1**   *Allows users without an external pedal to modulate the effect from the front panel.*

---

**Filter#2**

*Most parameters similar to those described above, dedicated to Filter 2; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

**Man_Ped1**   *Allows users without an external pedal to modulate the effect from the front panel.*

---

## stereo phaser

*(135   St Phaser)*

This simple stereo phase shifter allows the number of poles to be selected from 3 to 24, allowing great control over the strength of the effect. A 'mode' selector is provided for choice of modulation input between *LFO* and pedal.

*Stereo in, stereo out*
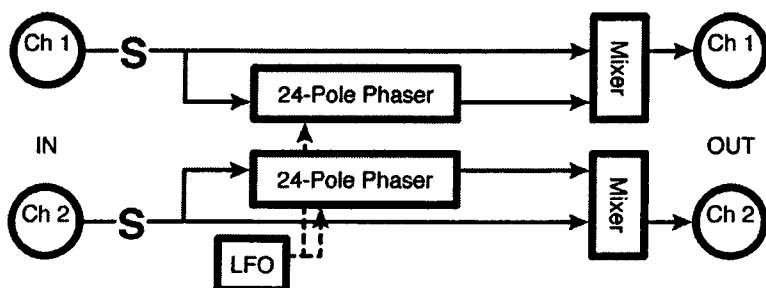


---

**Phaser**

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **Mix** | *Controls the ratio between the dry and wet (phased) signal. Set to "50%" if the dry signal won't be mixed in later (e.g. in a guitar rig).* |
| **Mode** | *Selects whether the LFO or an external pedal will modulate the filters.* |
| **Depth** | *Controls the depth of the phase effect.* |
| **Fback** | *Controls how much of each phaser's output is reapplied to its input for exaggerated phasing.* |
| **#Poles** | *Determines how many "poles" the phaser's filters will use. More poles: more pronounced effect.* |
| **Sweep** | *Determines if the modulation signal to each phaser is in phase ("sync") or out of phase ("oppose").* |
| **Man_Ped** | *Allows users without an external pedal to modulate the effect from the front panel.* |

---

**LFO**

| | |
|---|---|
| **Rate** | *Controls the modulation rate if T_Rate1 is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo.* |
| **T_Rate** | *Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off".* |
| **Shape** | *Determines the shape of the modulating signal.* |

| | |
|---|---|
| ***Duty*** | *Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall).* |
| ***Retrig*** | *Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate.* |
| ***Angle*** | *Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins.* |

## stereoizing phaser

*(136   StereoizingPhaser)*

Two phase shifters tapped off the 9th pole (left) and the 12th pole (right) create a credible stereo field.
*Summed in, stereo out*
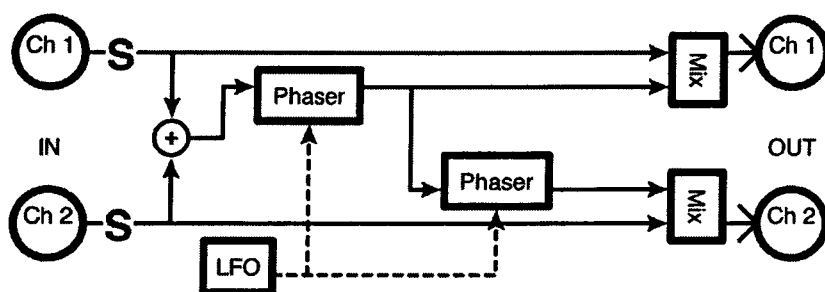


### Phaser

| | |
|---|---|
| ***Send*** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| ***Mix*** | *Controls the ratio between the dry and wet (phased) signal. Set to "50%" if the dry signal won't be mixed in later (e.g. in a guitar rig).* |
| ***Mode*** | *Selects whether the LFO or an external pedal will modulate the filters.* |
| ***Depth*** | *Controls the depth of the phase effect.* |
| ***Fback*** | *Controls how much of each phaser's output is reapplied to its input for exaggerated phasing.* |
| ***Man_Ped*** | *Allows users without an external pedal to modulate the effect from the front panel.* |

### LFO

| | |
|---|---|
| ***Rate*** | *Controls the modulation rate if T_Rate1 is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo.* |
| ***T_Rate*** | *Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off".* |
| ***Shape*** | *Determines the shape of the modulating signal.* |
| ***Duty*** | *Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall).* |
| ***Retrig*** | *Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate.* |

*Angle*      Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins.

## dual sample/hold

*(137  DualSamp/Hold)*

This unusual effect features dual low pass filters driven by a rhythmic control. It features 'master' and individual channel parameters. In addition there are controls for 'min/max' frequency and bandwidth as well as 'resonance'. The 'flux' parameter smoothes out changes.

*Stereo in, stereo out*



### Master

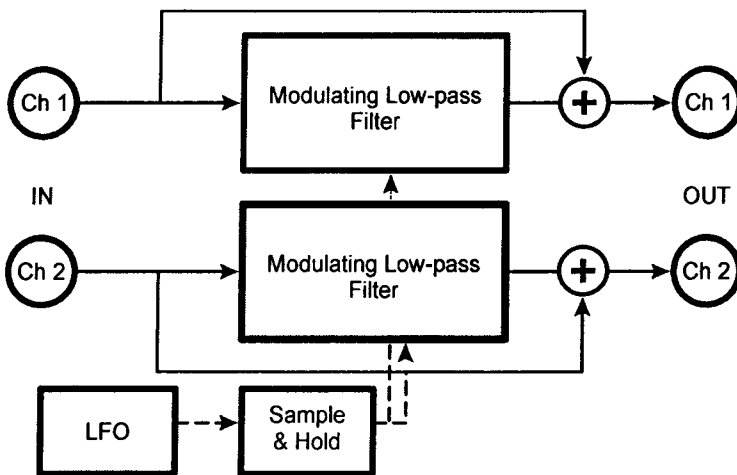| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **Mix** | Controls the ratio between the dry and wet (S/H) signal. |
| **F Min** | Sets the minimum frequency for the Sample and Hold. |
| **F Max** | Sets the maximum frequency for the Sample and Hold. |
| **Reson** | Controls the filter resonance. |
| **Flux** | Controls how quickly the filter moves between "notes". |
| **Rate** | Controls the modulation rate if T_Rate is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo. |
| **T_Rate** | Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off". |
| **Retrig** | Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate. |
| **Angle** | Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins. |

### S/H#1

*Parameters similar to those described above, dedicated to Sample and Hold 1; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

| S/H#2 |

*Parameters similar to those described above, dedicated to Sample and Hold 2; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

# vocal wa

*(138   VocalizedWa)*

This notorious Eventide effect contains three filter channels used as 'vowel' or 'formant' selectors, with individual level and pan controls. In addition, a 'mode' selector allows modulation from either an *LFO* or a pedal.
*Summed in, stereo out*
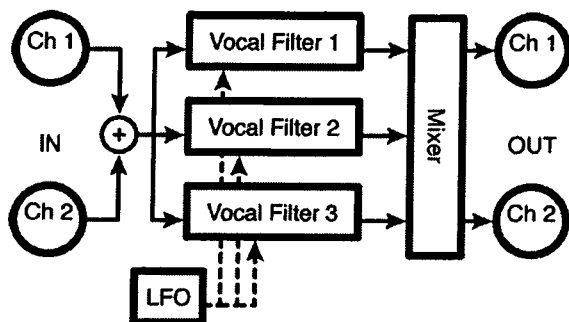


| Vowels | |
|---|---|
| **Mode** | Selects whether the LFO or an external pedal will modulate the filters. |
| **Vowel1** | Selects one of the filter "vowels". |
| **Vowel2** | Selects the second filter "vowel". |
| **Q** | Controls the bandwidth of the filters. |
| **QMod** | Controls how much the Q changes with modulation. |
| **Man_Ped** | Allows users without an external pedal to modulate the effect from the front panel. |

| LFO | |
|---|---|
| **Rate** | Controls the modulation rate if T_Rate1 is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo. |
| **T_Rate** | Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off". |
| **Shape** | Determines the shape of the modulating signal. |
| **Duty** | Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall). |
| **Retrig** | Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate. |
| **Angle** | Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins. |

| Mixer^(x = 1, 2, 3) | |
|---|---|
| **Level x** | Controls the level of filter x. |

*Pan x*    *Positions the image of filter x in the stereo field.*

## 10 band vocoder

*(139   Vocoder10)*

A vocoder allows the characteristics of one signal to be superimposed on another; for example a guitar can be made to 'sing,' or a choir-like effect can be produced by using a noise source as the instrument.

The left input (channel #1) or and internal noise source feeds carrier (instrument), while right input (channel #2) feeds the modulator (voice). The output is the sum of ten frequency bands from 20Hz to 20kHz, with 'level' and 'pan' for each band.
*Dual in, stereo out*
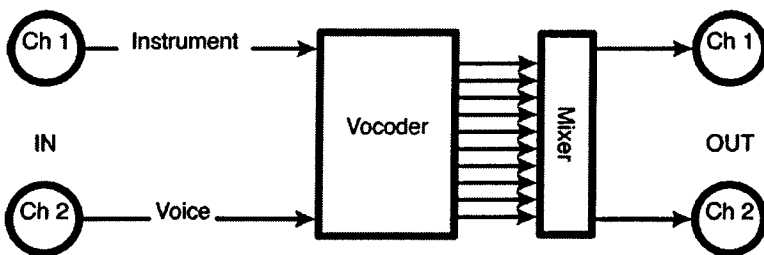


### Cal

| | |
|---|---|
| **Carrier** | Determines if the spectrum supplied by input 2 (voice) will be applied to "noise" or to the signal supplied at input 1 ("left in"). |
| **L Gain** | Controls the level of the left input (instrument). |
| **R Gain** | Controls the level of the right input (voice). |
| **Q/Res** | Controls the bandwidth of each filter. Lower values deliver a louder, albeit less distinct effect. |
| **Attack** | Controls how quickly the envelope follower on each filter will track an increase in the right input (voice). |
| **Decay** | Controls how quickly the envelope follower on each filter will track a decrease in the right input (voice). |

### Freqs^(x = 1, 2, ..., 10)

| | |
|---|---|
| **Freq x** | Controls the center frequency for band filter x. Avoid centering on frequencies outside the range of the right input (voice) - it's just a waste of a filter! |

### Mixer

#### Levels^(x = 1, 2, ..., 10)

| | |
|---|---|
| **M_Level** | Scales all the individual band filter levels, effectively serving as a master volume. |
| **Levelx** | Controls the level of band filter x. |

#### Pans^(x = 1, 2, ..., 10)

| | |
|---|---|
| **M_Pan** | Scales all the individual band filter pans, effectively controlling the stereo spread. |
| **Panx** | Controls the stereo placement of band filter x. |

## dual expanders

*(193 Stereo Expanders)*

A pair of independent "soft knee" expanders featuring 'master' and individual channel parameters as

well as metering of gain reduction.
*Dual mono in, dual mono out*
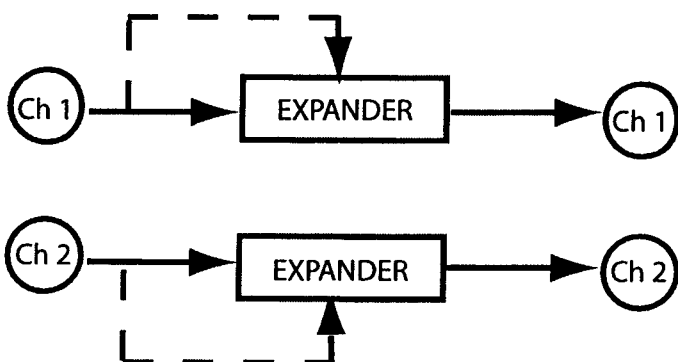


| Master | |
|---|---|
| **Thresh** | *Sets the input threshold below which expansion of the signal takes place and above which the signal is left alone.* |
| **S Knee** | *Controls the width of the "soft knee". The soft knee is a region below the threshold over which the ratio transitions from 1:1 to the selected Ratio. It smoothes out the expansion.* |
| **Ratio** | *Controls the input to output ratio for signals below the threshold. For example, "6:1" produces 1dB of output for every 6dB of input.* |
| **Range** | *Limits the amount of gain reduction applied to the output.* |
| **Attack** | *Controls how quickly the expander reacts to increasing levels.* |
| **Decay** | *Controls how quickly the expander reacts to decreasing levels* |
| **GR 1** | *Displays how much gain reduction (compression) is taking place in expander # 1.* |
| **GR 2** | *Displays how much gain reduction (compression) is taking place in expander #2* |

| Expand#1 |
|---|

*Parameters similar to those described above, dedicated to expander 1; changes made here can be*
*overwritten by those made under Master and vice versa (the most recently entered value "wins")*

| Expand#2 |
|---|

*Parameters similar to those described above, dedicated to expander 2; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins").*

# 24 band vocoder

*(194 Vocoder24)*

A vocoder allows the characteristics of one signal to be superimposed on another; for example a guitar can be made to 'sing,' or a choir-like effect can be produced by using a noise source as the instrument. The excitation input and internal noise sources feed the carrier (instrument), while the opposite channel feeds the modulator (voice).
*Dual in, summed out.*
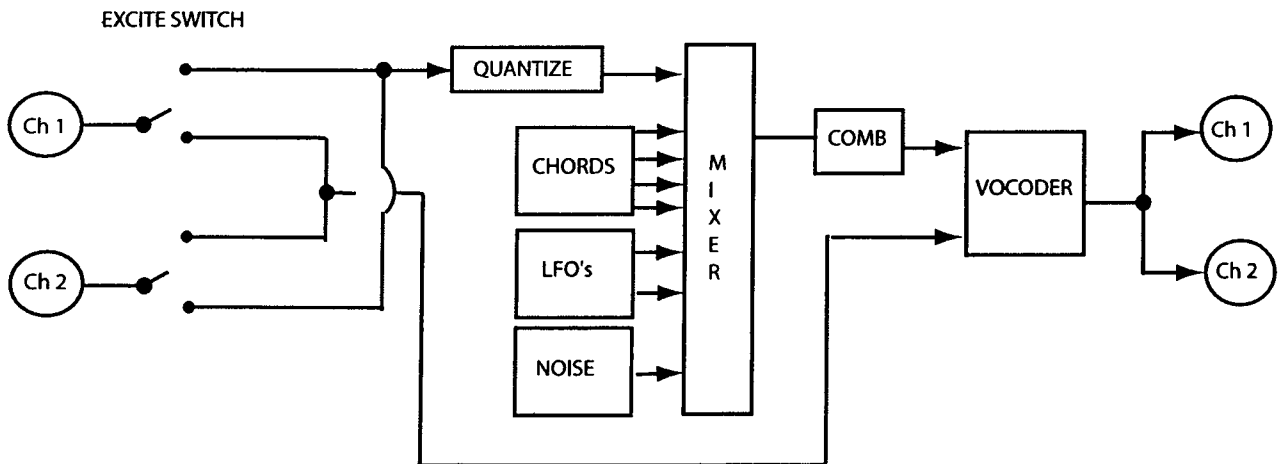


## Excite

| | |
|---|---|
| **Source** | *Determines which channel will be used to send to the 'synthesis' or excitation channel of the vocoder. The opposite channel (typically voice) will then be used to send to the 'analysis' channel.* |
| **Quantize** | *Determines bit depth of the excitation source signal.* |
| **Input** | *Controls the level of the quantized source into the excitation channel.* |
| **Noise** | *Controls the level of the noise into the excitation channel.* |
| **Chord** | *Controls the level of the impulse chord into the excitation channel.* |
| **Lfo's** | *Controls the level of the lfo's into the excitation channel.* |

## Vocode

| | |
|---|---|
| **Order** | *Sets the number of poles for the analysis and synthesis filters* |
| **Reson** | *Controls the resonance or 'q' of the filters* |
| **Note** | *Sets the delay length of the 'Comb' in musical values.* |
| **Octave** | *Sets the octave number used to modify (Note) parameter.* |
| **Delay** | *Sets the delay length of the 'Comb' in ms value.* |
| **Decay** | *Controls the coefficient or feedback amount (sharpness) of the comb.* |

**Noise**

*Modfreq Controls the frequency of the lfo used to modulate the 'Noise'*

*Modshape Controls waveshape of the lfo.*

*Modduty Controls the dutycycle of the lfo.*

**Chord**

*Note x   Sets the frequency of impulse x in musical values.*

*Octave x Sets the octave number used to modify (Note) parameter.*

*Freq x   Sets the frequency of impulse x in Hz*

**Level x** *Controls the level of impulse x*

**Tune**   *Controls the overall tuneing of the entire 'chord' in reference to 'A = Hz'*

**Mode**   *Selects midikeys or manual selection of 'chord' voicings*

**Midi**   *Selects which method unit will use as it responds to incoming midi notes.*

**Lfo's**

*Lfo1*    *Controls the frequency of lfo1.*

*Duty1*   *Controls the dutycycle of lfo1.*

*Level1*  *Controls the volume of lfo1.*

*Lfo2*    *Controls the frequency of lfo2.*

*Duty2*   *Controls the dutycycle of lfo2.*

*Level2*  *Controls the dutycycle of lfo2.*

*Duty3*   *Controls the dutycycle of lfo3.*

# Stereo Simulator

*(198 Stereo Simulator)*

Converts mono signals into stereo ones, using all pass filters and split-band processing. It avoids thinness you get on individual channels with other simulators and doesn't change levels and tone. Fully mono-compatible.
*Switchable input, stereo out*

**Operate**

**Mode**   Selects if output sound is Stereo or Mono.

**Spread** Sets the output level.

**Input**  Gives you a choice of which input are you Stereo Simulating...

**Output** Monitors mode.

## plex

*A plex is the feedback network of a reverb.*

### delay 8 plex

*(140  Delay8Plex)*

This one has eight 660 mS modulating delay lines with 'level' and 'pan' parameters for each independent output.

*Summed in, stereo out*

See "large delay 8 plex" above for diagram and parameters.

### large delay 8 plex

*(141  LrgDelay8Plex)*

This plex has eight two second modulating delay lines with 'level' and 'pan' parameters for each independent output.

*Summed in, stereo out*



| *Masters* | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **Level** | *Controls the output level.* |
| **Decay** | *Controls the delay feedback, effectively the reverb time.* |
| **Size** | *Scales the individual delay times, effectively altering the "room size".* |
| **HiCut** | *Controls the output level of a high shelving filter.* |
| **LowCut** | *Controls the output level of a low shelving filter.* |
| **HiFreq** | *Controls the cutoff frequency of the high shelving filter.* |
| **LowFreq** | *Controls the cutoff frequency of the low shelving filter.* |
| **Depth** | *Controls the depth of delay modulation for a chorus effect.* |

| Rate | Controls the modulation rate if T_Rate1 is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo. |
|---|---|
| T_Rate | Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off". |
| Image | Scales all the individual delay pans, effectively controlling the stereo spread. |
| Retrig | Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate. |
| Angle | Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins. |

**Plex**

**Delays^(x = 1, 2, ..., 8)**

| Delayx | Sets the delay time for delay x. |
|---|---|
| T-delayx | Controls length of delay times in rhythmic terms |

**Mixer^(x = 1, 2, ..., 8)**

| Levelx | Controls the level of delay x. |
|---|---|
| Panx | Controls the stereo placement of delay x. |

# detune 4 plex

*(142   Detune4Plex)*

This one has four 660 mS *detuners* in addition to 'level' and 'pan' parameters for each independent output.

*Summed in, stereo out*



**Masters**

| Send | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
|---|---|
| Level | Controls the output level. |
| Decay | Controls the delay feedback, effectively the reverb time. |
| Size | Scales the individual delay times, effectively altering the "room size". |
| HiCut | Controls the output level of a high shelving filter. |
| LowCut | Controls the output level of a low shelving filter. |
| HiFreq | Controls the cutoff frequency of the high shelving filter. |
| LowFreq | Controls the cutoff frequency of the low shelving filter. |

| *Detune* | Scales all the individual detune amounts, effectively serving as a master detune. |
|---|---|
| *Length* | Controls the delay time of the detune pitchshifters. |
| *Image* | Scales all the individual delay pans, effectively controlling the stereo spread. |

| *Detune^(x = 1, 2, 3, 4)* | |
|---|---|
| *Detunex* | Controls the pitchshift of detuner x. |
| *Delayx* | Controls the delay time of pitchshift x. |

| *Mixer^(x = 1, 2, 3, 4)* | |
|---|---|
| *Levelx* | Controls the level of detuner x. |
| *Panx* | Controls the stereo placement of detuner x. |

## reverse 4 plex

*(143   Reverse4Plex)*

This one adds four two-second reverse shifters as well as 'level' and 'pan' parameters for each independent output.
*Summed in, stereo out*

See "detune 4 plex" above for diagram.

| *Masters* | |
|---|---|
| *Send* | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| *Level* | Controls the output level. |
| *Decay* | Controls the reverse feedback. |
| *Size* | Scales the individual reverse times, effectively altering the "room size". |
| *Pitch* | Scales all the individual reverse shifters. |
| *HiCut* | Controls the output level of a high shelving filter. |
| *LowCut* | Controls the output level of a low shelving filter. |
| *HiFreq* | Controls the cutoff frequency of the high shelving filter. |
| *LowFreq* | Controls the cutoff frequency of the low shelving filter. |
| *Image* | Scales all the individual delay pans, effectively controlling the stereo spread. |

| *Plex* | |
|---|---|

| Pitch^(x = 1, 2, 3, 4) | |
|---|---|
| *Pitchx* | Controls the pitch of reverse shifter x. |

| Delays^(x = 1, 2, 3, 4) | |
|---|---|
| *Delayx* | Controls the delay time of reverse shifter x. |

| Mixer^(x = 1, 2, 3, 4) | |
|---|---|
| *Levelx* | Controls the level of reverse shifter x. |
| *Panx* | Controls the stereo placement of reverse shifter x. |

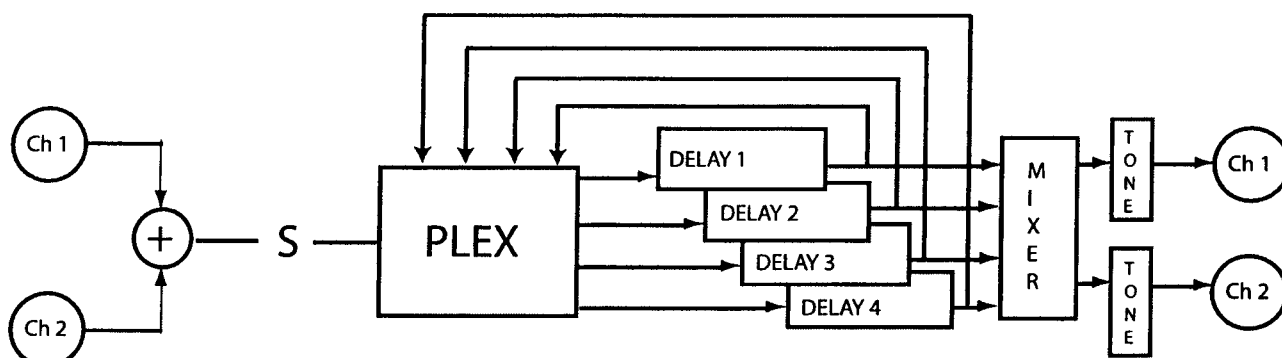## tdelay 4 plex

*(195 TDelay4Plex)*

This plex has four two second tempo delay lines with 'level' and 'pan' parameters for each independent output.
*Summed in, stereo out*



### Masters

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **Level** | Controls the output level. |
| **Decay** | Controls the delay feedback, effectively the reverb time. |
| **HiCut** | Controls the output level of a high shelving filter. |
| **LowCut** | Controls the output level of a low shelving filter. |
| **HiFreq** | Controls the cutoff frequency of the high shelving filter. |
| **LowFreq** | Controls the cutoff frequency of the low shelving filter. |
| **Depth** | Controls the depth of delay modulation for a chorus effect. |
| **Rate** | Controls the modulation rate if T_Rate1 is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo. |
| **T_Rate** | Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off". |
| **Image** | Scales all the individual delay pans, effectively controlling the stereo spread. |
| **Retrig** | Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate. |
| **Angle** | Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins. |

### Plex

#### Delays^(x = 1, 2, ..., 4)

*Delayx* Sets the delay time for delay x.

*T Delayx* Controls the delay time for delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".

#### .Mixer^(x = 1, 2, ..., 4)

*Levelx* Controls the level of delay x.

*Panx* Controls the stereo placement of delay x.

## preamps

### fuzzADSRpre

*(144   FuzzADSRPreamp)*

This instrument preamp has compression, by-passable fuzz, EQ, remote 'volume pedal' and gate, as well as an ADSR controlled amp and an ASDR controlled filter for synth emulation.
*Summed in, summed out*



---

*PreAmp*

**Comp**

| | |
|---|---|
| **Thresh** | Sets the input threshold above which compression takes place and below which the signal is left alone. |
| **Gain** | Adjusts the output level to improve gain structure. |
| **Attack** | Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold. |
| **Decay** | Controls how quickly the compressor "lets go" of a signal once it falls below the threshold. |
| **Ratio** | Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input. |

**Fuzz**

| | |
|---|---|
| **Fuzz** | Selects distortion "in" or "out". |
| **Drive** | Controls how much input (drive) is sent to the distortion. The greater the input, the greater the distortion. |
| **Level** | Controls the output level of the distortion. |
| **Flux** | Controls the distortion "slew rate" to change its timbre, or how "in your face" it sounds. |
| **HiCut** | Controls the cutoff frequency of a gentle lowpass filter. |

**EQ**

| | |
|---|---|
| **Trim** | Controls the input level to the EQ. |
| **Low** | Controls the low EQ boost/cut. |
| **Mid** | Controls the mid EQ boost/cut. |
| **High** | Controls the high EQ boost/cut. |
| **Low** | Controls the low EQ center frequency. |
| **Mid** | Controls the mid EQ center frequency. |
| **High** | Controls the high EQ center frequency. |
| **Manual_P** | Allows users without an external pedal to modulate the effect from the front panel. |

| Gate | |
|---|---|
| G Thresh | Sets the input threshold that the signal must exceed to open the gate. |
| G Attack | Controls how quickly the gate opens up once the signal exceeds the threshold. |
| G Decay | Controls how quickly the gate closes once the signal falls below the threshold. |

| A ADSR Controls the ADSR which modulates the Amp | |
|---|---|
| Sens | Controls the sensitivity of the A and F ADSR triggers. |
| Retrig | Determines the crossfade time between the old modulation level and the new modulation level when the A ADSR is retriggered. |
| A DLevel | Controls the level of the initial A ADSR peak as a percentage of the total possible modulation output. |
| A SLevel | Controls the level of the sustain portion of the A ADSR as a percentage of the total possible modulation output. |
| A Attack | Controls the attack time. |
| A Decay | Controls the decay time. |
| A Sustain | Controls the sustain time. |
| A Release | Controls the release time. |

| Peak | |
|---|---|
| Attack | Smoothes the rise time of the signal that triggers the A and F ADSRs. |
| Decay | Smoothes the fall time of the signal that triggers the A and F ADSRs. |

| Filter | |
|---|---|

| Filter | |
|---|---|
| Freq | Controls the "baseline" center frequency or cutoff frequency. |
| Fmod | Controls how far from the "baseline" the cutoff frequency will deviate in response to the F ADSR modulation signal. |
| Q | Controls the "baseline" bandwidth or resonance. |
| Qmod | Controls how far from the "baseline" the Q will deviate in response to the F ADSR modulation signal. |
| Type | Selects the type of filter. |

| F ADSR – controls the Filter ADSR | |
|---|---|
| Sens | Controls the sensitivity of the A and F ADSR triggers – this is the same control as above, duplicated for convenience. |
| Retrig | Determines the crossfade time between the old modulation level and the new modulation level when the F ADSR is retriggered. |
| F DLevel | Controls the level of the initial F ADSR peak as a percentage of the total possible modulation output. |
| F SLevel | Controls the level of the sustain portion of the F ADSR as a percentage of the total possible modulation output. |
| F Attack | Controls the attack time. |
| F Decay | Controls the decay time. |
| F Sustain | Controls the sustain time. |
| F Release | Controls the release time. |

| Peak - same controls as above, duplicated for convenience | |
|---|---|
| Attack | Smoothes the rise time of the signal that triggers the A and F ADSRs. |
| Decay | Smoothes the fall time of the signal that triggers the A and F ADSRs. |

## bass pre

*(145   BassPreamp)*

A simple preamp configuration with compression, three-band EQ, class A distortion, and a 'thickener' parameter.

*Summed in, summed out*
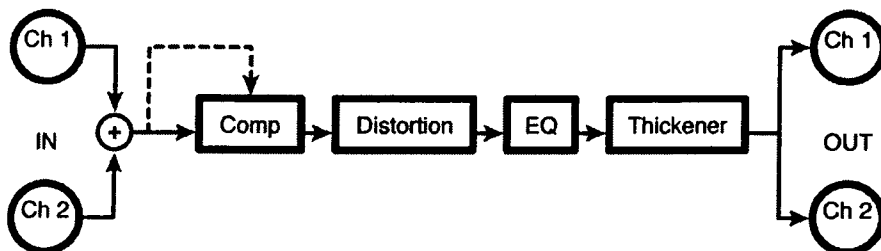


### Comp

| | |
|---|---|
| **Thresh** | Sets the input threshold above which compression of the signal takes place and below which the signal is left alone. |
| **Ratio** | Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input. |
| **Attack** | Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold. |
| **Decay** | Controls how quickly the compressor "lets go" of a signal once it falls below the threshold. |

### Tone

| | |
|---|---|
| **Trim** | Controls the input level to the EQ. |
| **Low** | Controls the low EQ boost/cut. |
| **Mid** | Controls the mid EQ boost/cut. |
| **High** | Controls the high EQ boost/cut. |
| **Thicken** | Controls the amount of "thickener". Slather it on... |
| **Distort** | Controls how much input (drive) is sent to the distortion. The greater the input, the greater the distortion. |

## overdrive preamp

*(146   OverdrivePreamp)*

Instrument preamp with compression, bypassable fuzz, EQ, remote 'volume pedal' and gate. This flavor is an overdrive effect and is much more interactive with the source signal.
*Summed in, summed out*



### PreAmp

#### OD

| | |
|---|---|
| **Fuzz** | Selects distortion "in" or "out". |
| **Drive** | Controls how much input (drive) is sent to the distortion. The greater the input, the greater the distortion. |
| **Level** | Controls the output level of the distortion. |
| **Flux** | Controls the distortion "slew rate" to change its timbre, or how "in your face" it sounds. |
| **HiCut** | Controls the cutoff frequency of a gentle lowpass filter. |

#### Comp

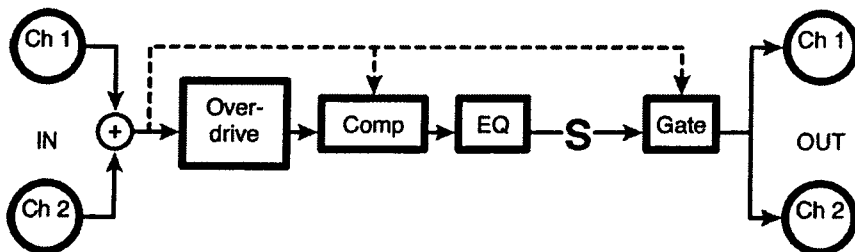| | |
|---|---|
| **Thresh** | Sets the input threshold above which compression takes place and below which the signal is left alone. |
| **Gain** | Adjusts the output level to improve gain structure. |
| **Attack** | Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold. |
| **Decay** | Controls how quickly the compressor "lets go" of a signal once it falls below the threshold. |
| **Ratio** | Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input. |

#### EQ

| | |
|---|---|
| **Trim** | Controls the input level to the EQ. |
| **Mid1** | Controls the mid1 EQ center frequency. |
| **Mid1** | Controls the mid1 EQ boost/cut. |
| **Mid2** | Controls the mid2 EQ center frequency. |
| **Mid2** | Controls the mid2 EQ boost/cut. |

#### Gate

| | |
|---|---|
| **G Thresh** | Sets the input threshold that the signal must exceed to open the gate. |
| **G Attack** | Controls how quickly the gate opens up once the signal exceeds the threshold. |
| **G Decay** | Controls how quickly the gate closes once the signal falls below the threshold. |
| **Manual_P** | Allows users without an external pedal to modulate the effect from the front panel. |

## fuzz preamp

*(147   FuzzPreamp)*

This instrument preamp has compression, bypass-able fuzz, EQ, remote 'volume pedal' and gate.
*Summed in, summed out*



### PreAmp

#### Comp

| | |
|---|---|
| **Thresh** | *Sets the input threshold above which compression takes place and below which the signal is left alone.* |
| **Gain** | *Adjusts the output level to improve gain structure.* |
| **Attack** | *Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold.* |
| **Decay** | *Controls how quickly the compressor "lets go" of a signal once it falls below the threshold.* |
| **Ratio** | *Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input.* |

#### Fuzz

| | |
|---|---|
| **Fuzz** | *Selects distortion "in" or "out".* |
| **Freq** | *Controls the frequency of a pre-drive band EQ.* |
| **Filter** | *Controls the mix of the pre-drive filter.* |
| **Q** | *Controls the bandwidth or resonance of the pre-drive filter.* |
| **Drive** | *Controls how much input (drive) is sent to the distortion. The greater the input, the greater the distortion.* |
| **Level** | *Controls the output level of the distortion.* |
| **Flux** | *Controls the distortion "slew rate" to change its timbre, or how "in your face" it sounds.* |
| **HiCut** | *Controls the cutoff frequency of a gentle lowpass filter.* |

#### EQ

| | |
|---|---|
| **Trim** | *Controls the input level to the EQ.* |
| **Low** | *Controls the low EQ boost/cut.* |
| **Mid** | *Controls the mid EQ boost/cut.* |
| **High** | *Controls the high EQ boost/cut.* |
| **Low** | *Controls the low EQ center frequency.* |
| **Mid** | *Controls the mid EQ center frequency.* |
| **High** | *Controls the high EQ center frequency.* |

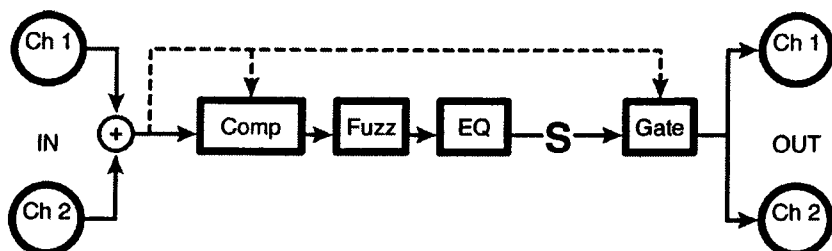| Gate | |
|---|---|
| **G Thresh** | Sets the input threshold that the signal must exceed to open the gate. |
| **G Attack** | Controls how quickly the gate opens up once the signal exceeds the threshold. |
| **G Decay** | Controls how quickly the gate closes once the signal falls below the threshold. |
| **Manual_P** | Allows users without an external pedal to modulate the effect from the front panel. |

# polydriver

*(148 PolyDriver)*

A compressor feeds six bandpassed class A drivers mixed to stereo leading to a remote 'volume pedal' and gate.

*Summed in, stereo out*
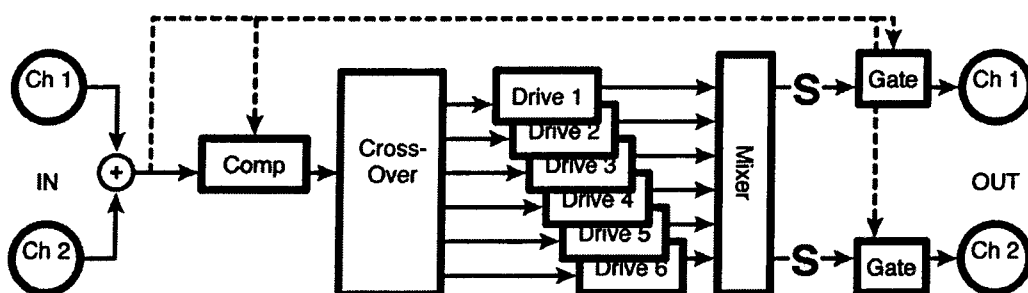


| PreAmp | |
|---|---|

| Comp | |
|---|---|
| **Thresh** | Sets the input threshold above which compression takes place and below which the signal is left alone. |
| **Gain** | Adjusts the output level to improve gain structure. |
| **Attack** | Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold. |
| **Decay** | Controls how quickly the compressor "lets go" of a signal once it falls below the threshold. |
| **Ratio** | Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input. |

| Drives | |
|---|---|
| **Trim** | Controls the input level to the distortion. |
| **Drive 1..6** | Controls the drive level of drive 1 to 6. |

| Filters | |
|---|---|
| **Freq 1..6** | Controls the center frequency for band filter 1 thru 6. |
| **Q** | Controls the bandwidth for all six band filters. |
| **HiCut** | Controls the cutoff frequency of a gentle lowpass filter. |

| Pans | |
|---|---|
| **Pan 1..6** | Controls the stereo position for band 1 thru 6. |

## fuzzpre wa/wammy

*(149   FuzzWaWammyPre)*
This is an instrument preamp with compression, bypass-able fuzz, EQ, remote 'volume pedal' and gate.
This flavor has 'wah-wah' and 'wammy' effects. You can choose which effect is controlled by the 'pedal.'
*Summed in, summed out*
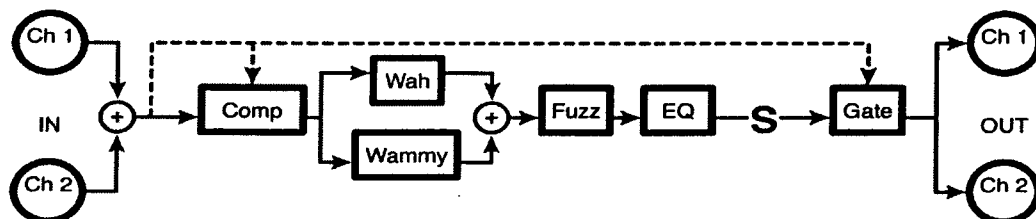
### PreAmp

#### Comp

| | |
|---|---|
| **Thresh** | Sets the input threshold above which compression takes place and below which the signal is left alone. |
| **Gain** | Adjusts the output level to improve gain structure. |
| **Attack** | Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold. |
| **Decay** | Controls how quickly the compressor "lets go" of a signal once it falls below the threshold. |
| **Ratio** | Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input. |

#### Fuzz

| | |
|---|---|
| **Fuzz** | Selects distortion "in" or "out". |
| **Drive** | Controls how much input (drive) is sent to the distortion. More input, more distortion. |
| **Level** | Controls the output level of the distortion. |
| **Flux** | Controls the distortion "slew rate" to change its timbre, or how "in your face" it sounds. |
| **HiCut** | Controls the cutoff frequency of a gentle lowpass filter. |

#### EQ

| | |
|---|---|
| **Trim** | Controls the input level to the EQ. |
| **Low** | Controls the low EQ boost/cut. |
| **Mid** | Controls the mid EQ boost/cut. |
| **High** | Controls the high EQ boost/cut. |
| **Low** | Controls the low EQ center frequency. |
| **Mid** | Controls the mid EQ center frequency. |
| **High** | Controls the high EQ center frequency. |

#### Gate

| | |
|---|---|
| **G Thresh** | Sets the input threshold that the signal must exceed to open the gate. |
| **G Attack** | Controls how quickly the gate opens up once the signal exceeds the threshold. |
| **G Decay** | Controls how quickly the gate closes once the signal falls below the threshold. |

### Pedals

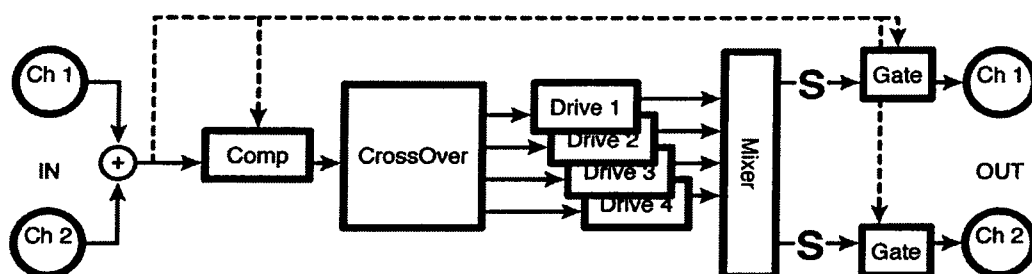| | |
|---|---|
| **Effect** | Select which effect the external foot pedal will control: "volume", "wammy" (pitch shifter), or "wawa". |

| | |
|---|---|
| *Heel* | *Determines the "wammy" pitch when the pedal is at the heel position.* |
| *Toe* | *Determines the "wammy" pitch when the pedal is at the toe position.* |
| *Delay* | *Controls the "wammy" pitchshifter delay time.* |
| *Freq* | *Controls the "baseline" center frequency or cutoff frequency for the "wawa".* |
| *Fmod* | *Controls how far from the "baseline" the cutoff frequency will deviate in response to the modulation signal for the "wawa".* |
| *Q* | *Controls the "baseline" bandwidth or resonance for the "wawa".* |
| *Qmod* | *Controls how far from the "baseline" the Q will deviate in response to the modulation signal for the "wawa".* |
| *LowNote* | *Determines the lowest note the "wammy" pitchshifter will correctly shift. Set as high as possible for best results.* |
| *XFade* | *Controls the crossfade between old "wammy" pitchshift values and new pitchshift values.* |
| *Manual_P* | *Allows users without an external pedal to modulate the effect from the front panel.* |

## ez polyfuzz

*(150   EZPolyFuzz)*
A compressor feeds a four-band *polyfuzz* (each band feeds individual distortion elements). This one has simplified parameters.
*Summed in, stereo out*



### PreAmp

#### Comp

| | |
|---|---|
| *Thresh* | *Sets the input threshold above which compression takes place and below which the signal is left alone.* |
| *Gain* | *Adjusts the output level to improve gain structure.* |
| *Attack* | *Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold.* |
| *Decay* | *Controls how quickly the compressor "lets go" of a signal once it falls below the threshold.* |
| *Ratio* | *Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input.* |

#### PolyFuzz

| | |
|---|---|
| *Tone* | *Controls the overall tone of the distortion (higher values are brighter).* |
| *Q* | *Controls the bandwidth of all the band filters.* |
| *Drive* | *Controls how much input (drive) is sent to the distortion. More input, more the distortion.* |
| *Flux* | *Controls the distortion "slew rate" to change its timbre, or how "in your face" it sounds.* |
| *Level* | *Controls the output level of the distortion.* |
| *Image* | *Controls the stereo spread of the effect.* |

HiCut      Controls the cutoff frequency of a gentle lowpass filter.

| Gate | |
|---|---|
| **G Thresh** | Sets the input threshold that the signal must exceed to open the gate. |
| **G Attack** | Controls how quickly the gate opens up once the signal exceeds the threshold. |
| **G Decay** | Controls how quickly the gate closes once the signal falls below the threshold. |
| **Manual_P** | Allows users without an external pedal to modulate the effect from the front panel. |

# polyfuzz

*(151   PolyFuzz)*

Here the compressor feeds a four band gated *polyfuzz* (each band feeds individual distortion elements). This one has individual parameters.

*Summed in, stereo out*
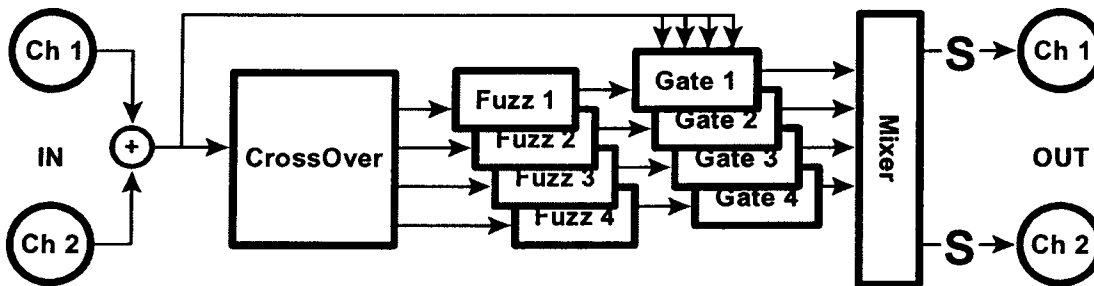


| PolyFuzz | |
|---|---|

| **Filters^(x = 1, 2, 3, 4)** | |
|---|---|
| **Freq x** | Controls the center frequency for band filter x. |
| **Q x** | Controls the bandwidth for band filter x. |

| **Fuzz^(x = 1, 2, 3, 4)** | |
|---|---|
| **Drive x** | Controls how much input (drive) from band filter x is sent to the distortion. The greater the input, the greater the distortion. |
| **Level x** | Controls the output level of drive x. |

| **HiCuts^(x = 1, 2, 3, 4)** | |
|---|---|
| **Flux x** | Controls the distortion "slew rate" of drive x to change its timbre, or how "in your face" it sounds. |
| **HiCut x** | Controls the cutoff frequency of a gentle lowpass filter after drive x. |

| **Image^(x = 1, 2, 3, 4)** | |
|---|---|
| **Pan x** | Controls where in the stereo field drive x will appear (negative values scoot it left and positive values scoot it right). |

| **Gates^(x = 1, 2, 3, 4)** | |
|---|---|
| **Thresh** | Sets the input threshold that the signal must exceed to open the gate. |
| **Attack x** | Controls how quickly the gate after drive x opens up once the signal exceeds the threshold. |
| **Decay x** | Controls how quickly the gate after drive x closes once the signal falls below the threshold. |
| **Manual_P** | Allows users without an external pedal to modulate the effect from the front panel. |

## distortion preamp

*(196 DistortionPreamp)*

This instrument preamp has compression, dynamic distortion, EQ, remote 'volume pedal' and gate.
*Summed in, summed out*
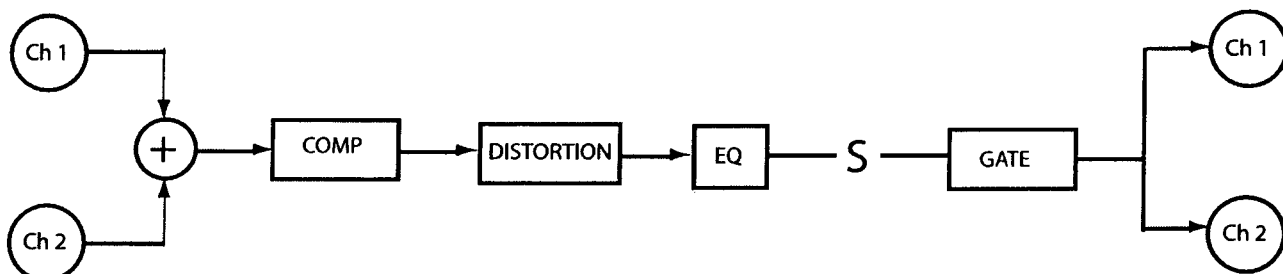


### PreAmp

#### Comp

| | |
|---|---|
| **Thresh** | *Sets the input threshold above which compression takes place and below which the signal is left alone.* |
| **Gain** | *Adjusts the output level to improve gain structure.* |
| **Attack** | *Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold.* |
| **Decay** | *Controls how quickly the compressor "lets go" of a signal once it falls below the threshold.* |
| **Ratio** | *Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input.* |

#### Distortion

| | |
|---|---|
| **Distortion** | *Selects distortion "in" or "out".* |
| **Filter** | *Controls the mix of the pre-drive filter.* |
| **Freq** | *Controls the frequency of a pre-drive band EQ.* |
| **Q** | *Controls the bandwidth or resonance of the pre-drive filter.* |
| **Curve** | *Selects which transformation curve is used to generate distortion.* |
| **Drive** | *Controls how much input (drive) is sent to the distortion. The greater the input, the greater the distortion.* |
| **Level** | *Controls the output level of the distortion.* |
| **Flux** | *Controls the distortion "slew rate" to change its timbre, or how "in your face" it sounds.* |
| **HiCut** | *Controls the cutoff frequency of a gentle lowpass filter.* |
| **Fdbk** | *Controls the amount of "forced feedback," similar to an amplifier feeding back at high volume levels.* |

#### EQ

| | |
|---|---|
| **Trim** | *Controls the input level to the EQ.* |
| **Low** | *Controls the low EQ boost/cut.* |
| **Mid** | *Controls the mid EQ boost/cut.* |
| **High** | *Controls the high EQ boost/cut.* |
| **Low** | *Controls the low EQ center frequency.* |
| **Mid** | *Controls the mid EQ center frequency.* |
| **High** | *Controls the high EQ center frequency.* |
| **Mid Q** | *Controls the bandwidth amount for the mid EQ frequency* |

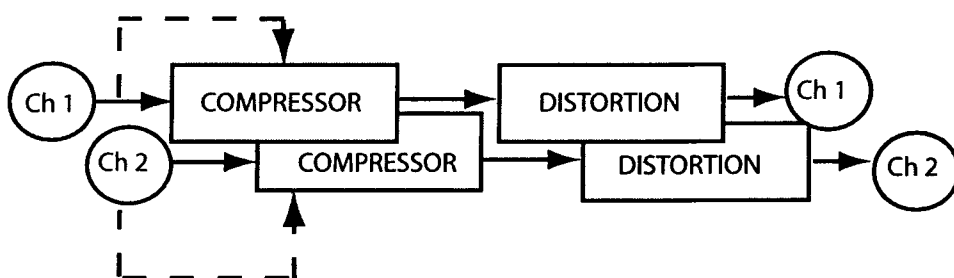| Gate | |
|---|---|
| **G Thresh** | *Sets the input threshold that the signal must exceed to open the gate.* |
| **G Attack** | *Controls how quickly the gate opens up once the signal exceeds the threshold.* |
| **G Decay** | *Controls how quickly the gate closes once the signal falls below the threshold.* |
| **Manual_P** | *Allows users without an external pedal to modulate the effect from the front panel.* |

## st distortion

*(197 St Distortion)*

This distortion tool has compression, and dynamic morphing distortion.
*Stereo in, stereo out.*



| PreAmp | |
|---|---|

| **Comp** | |
|---|---|
| **Thresh** | *Sets the input threshold above which compression takes place and below which the signal is left alone.* |
| **Ratio** | *Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input.* |
| **Gain** | *Adjusts the output level to improve gain structure.* |
| **Attack** | *Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold.* |
| **Decay** | *Controls how quickly the compressor "lets go" of a signal once it falls below the threshold.* |

| **Distortion** | |
|---|---|
| **Distortion** | *Selects distortion "in" or "out".* |
| **Filter** | *Controls the mix of the pre-drive filter.* |
| **Freq** | *Controls the frequency of a pre-drive band EQ.* |
| **Q** | *Controls the bandwidth or resonance of the pre-drive filter.* |
| **Drive** | *Controls how much input (drive) is sent to the distortion. The greater the input, the greater the distortion.* |
| **Level** | *Controls the output level of the distortion.* |
| **Curve1** | *Selects which transformation curve is used to generate distortion (with no modulation at (morph)).* |
| **Curve2** | *Selects which transformation curve is used to generate distortion (with full modulation at (morph)).* |
| **Flux** | *Controls the distortion "slew rate" to change its timbre, or how "in your face" it sounds.* |
| **HiCut** | *Controls the cutoff frequency of a gentle lowpass filter.* |
| **Man_morph** | *Allows users without an external pedal to modulate between (curve#1) and (curve #2) from the front panel.* |

## shifters

*A diatonic pitch shifter shifts the musical pitch of an audio signal while maintaining the proper harmonic relationship to a diatonic scale. To accomplish this, the user specifies the desired key, scale and musical interval. The pitch shifter takes care of finding out what note is being played and automatically adjusts the amount of pitch shift so that the resultant note is in-key.*

*In general, the operation of any shifter can be improved by optimizing the setting of the 'low note' parameter, which defines the lowest note that the shifter recognizes. This should be set low for polyphonic material such as guitar, and higher for vocals.*

*The 'xfade' parameter can usually be left alone – greater values may increase smoothness at the cost of blurring transients, lower values may add roughness.*

## auto pitch correct

*(158   AutoCorrect)*

This algorithm is essentially a diatonic shifter with independent delay parameters. Set as 'chromatic.'
*Summed in, stereo out*
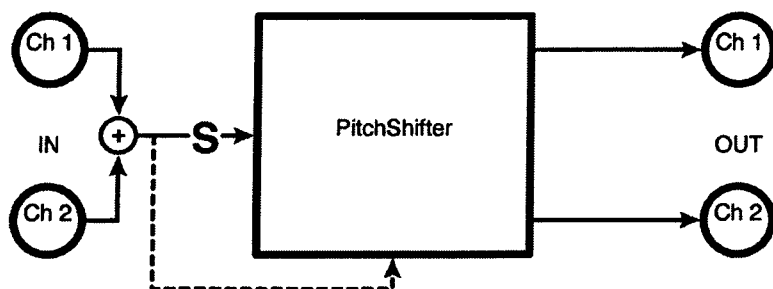


### Meter

| | |
|---|---|
| **Error** | *Monitors how far off the Eclipse believes the input is from "correct".* |
| **Fixed** | *Monitors how far the Eclipse is bending (or fixing) the input to correct the error.* |

### Shift

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **Quant** | *Determines the level of "quantization", or how close the Eclipse will bring an "off" note to "perfection".* |
| **Tune** | *Controls the detector's calibration, allowing for deviation from A-440 tuning.* |
| **Key** | *Selects the key that the corrector references (if a scale is in fact selected under Scale).* |
| **Scale** | *Selects the scale that the corrector references.* |
| **Glide** | *Controls how quickly the shifter slides between shift values.* |
| **Delay L** | *Controls the left channel shifter delay time.* |
| **Delay R** | *Controls the right channel shifter delay time.* |
| **Level L** | *Controls the left channel output level.* |
| **Level R** | *Controls the right channel output level.* |

| Cal | |
|---|---|
| **LowNote** | *Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results.* |
| **Source** | *Optimizes the corrector for either "vocal" or "instrument" input.* |
| **XFade** | *Controls the crossfade between old pitchshift values and new pitchshift values.* |

## dual wammy

*(159  DualWammy)*

This externally controlled shifter has 'master' and individual channel parameters. Pitch and modulation are set up as 'heel/toe' parameters.

*Stereo in, stereo out*
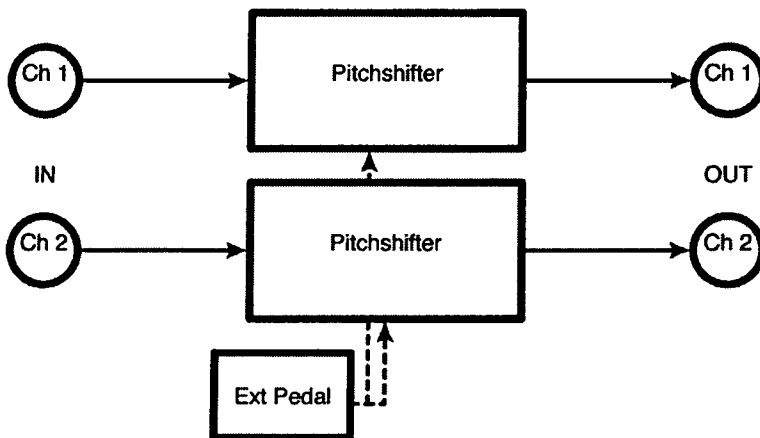


| Master | |
|---|---|
| **Bypass** | *Selects "fx in" or "fx out".* |
| **Man_Wam** | *Allows users without an external pedal to modulate the effect from the front panel.* |
| **Heel** | *Determines the "wammy" pitch when the pedal is at the heel position.* |
| **Toe** | *Determines the "wammy" pitch when the pedal is at the toe position.* |
| **Delay** | *Controls the "wammy" pitchshifter delay time.* |
| **LowNote** | *Determines the lowest note the "wammy" pitchshifter will correctly shift. Set as high as possible for best results.* |
| **XFade** | *Controls the crossfade between old "wammy" pitchshift values and new pitchshift values.* |

| Wammy#1 |
|---|
| *Parameters similar to those described above, dedicated to "wammy" pitchshifter 1; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")* |

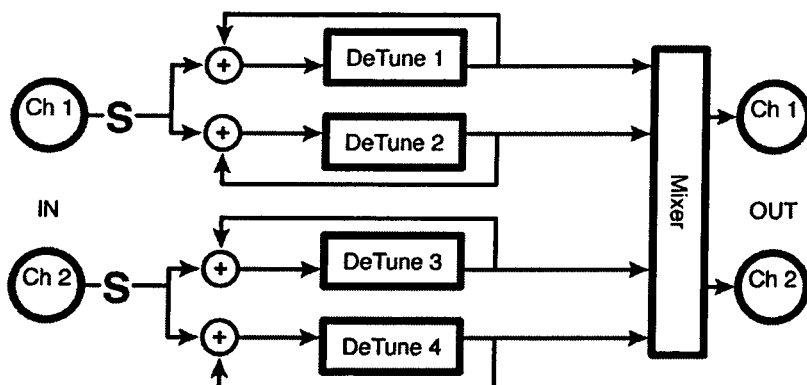| Wammy#2 |
|---|
| *Parameters similar to those described above, dedicated to "wammy" pitchshifter 2; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")* |

## 4 detuners

*(160   4Detuners)*

There are four 660 mS *detuners* with independent feedback paths. 'Tightness' is a master length/splice parameter.

*Stereo in, stereo out*



### Masters

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **m_Level** | Scales all the individual detune levels, effectively serving as a master volume. |
| **m_Pitch** | Scales all the individual detune amounts, effectively serving as a master pitch. |
| **m_Delay** | Scales all the individual detune delay times, effectively serving as a master delay (e.g. if the four delays are set to 200ms, 150ms, 100ms, and 50ms, setting M_Delay to 50% cuts those times in half (100ms, 75ms, 50ms, and 25ms)). |
| **m_Fback** | Scales all the individual detune delay feedbacks, effectively serving as a master feedback (i.e. if M_Fback is set to 0%, all the delays will have no feedback, regardless of their individual settings. Alternatively, you could also have no feedback with M_Fback set to 100% if you set each delay's feedback parameter to 0%.). |
| **m_Pan** | Scales all the individual detune pans, effectively serving as an image spread control (i.e. if M_Pan is set to 0%, all the delays will be panned center, regardless of their individual settings). |
| **Tightnes** | Controls the "length" of the detuner. Shorter values yield tighter, albeit glitched results. Longer values yield deglitched, albeit "looser" results. Find the happy medium! |

### Shift^(x = 1, 2, 3, 4)

| | |
|---|---|
| **Detune x** | Controls the detune amount of detune x. |
| **Level x** | Controls the level of detune x. |
| **Delay x** | Controls the delay time of detune x. |
| **Fback x** | Controls how much of detune x's output is reapplied to its input. |
| **Pan x** | Controls where in the stereo field detune x will appear. |

## reverse crystals

*(161 ReverseCrystals)*

Here we have two five second reverse shifters where the feedback signal can be the sum of the outputs, the channel output or the other channel for 'crisscross' effects. Note that the delay times are independent of the splice length (keep at 0 ms for splicing referenced to actual delay perceived).

*Stereo in, stereo out*
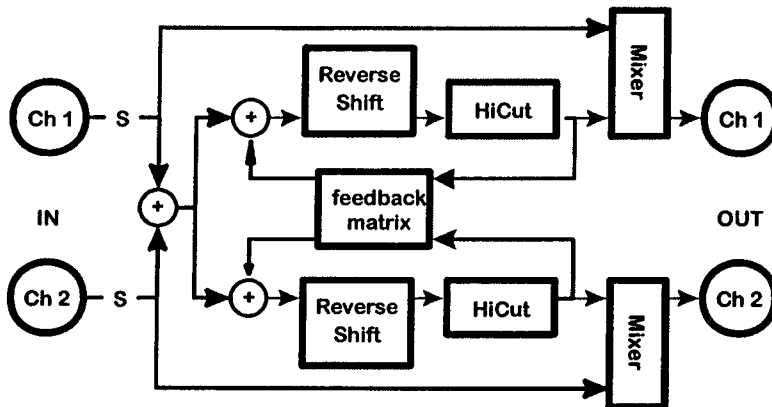


### Masters

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **Mix** | Controls the wet-to-dry ratio. If set to "0%", you won't hear any "crystals". If set to "100%" you'll hear nothing but "crystals". |
| **m_Fback** | Scales all the individual delay feedbacks, effectively serving as a master feedback (i.e. if M_Fback is set to 0%, all the delays will have no feedback, regardless of their individual settings. Alternatively, you could also have no feedback with M_Fback set to 100% if you set each delay's feedback parameter to 0%.). |
| **FB Type** | Determines if the feedback from each "crystal" will return to its own input, to the other delay's input, or to both. |
| **Hicut** | Controls the lowpass filter cutoff frequency. |

### Crystals^(x = 1, 2)

| | |
|---|---|
| **Pitch x** | Controls the pitch of reverse shifter x. |
| **Fback x** | Controls how much of reverse shifter x's output is reapplied to its input. |
| **Length x** | Controls the audible delay time. Either reflects this time as entered by the T_Length to its right (given the current tempo) or allows you to enter the delay time in milliseconds. |
| **T_Length** | Controls the audible delay time. Controls this time in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off". |
| **Delay x** | Controls the pitchshifting delay (typically very short). Either reflects the physical delay time as entered by T_Delayx (given the current tempo) or allows you to enter the delay time in milliseconds . |
| **T_Delay x** | Controls the pitchshifting delay (typically very short). Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off". |

## stereoshift

*(162   St Shifter)*

This phase-coherent, non-diatonic shifter has simple controls. It is designed to preserve the stereo 'image' of the input signal.
*Stereo in, stereo out*
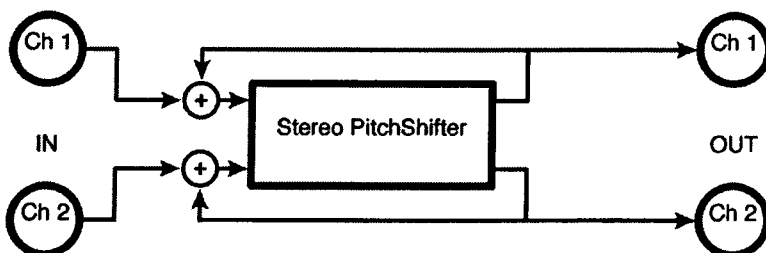
### Shift

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **Level** | *Controls the output level.* |
| **Pitch** | *Controls the amount of pitchshift effect.* |
| **Delay** | *Controls the delay time for optimal performance.* |
| **Fback** | *Controls how much of the pitchshifter's output is reapplied to its input.* |
| **LowNote** | *Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results.* |
| **XFade** | *Controls the crossfade between old pitchshift values and new pitchshift values.* |

## diatonicshift 2

*(163   DiatonicShift2)*

A single two-voice diatonic shifter whose feedback path is the sum of both outputs, with 'master' and individual parameters. *LFO* and external modulation are available.
*Summed in, stereo out*

### Masters

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **m_Level** | *Scales both pitchshifter levels, effectively serving as a master volume.* |
| **m_Dly** | *Scales both delay times, effectively serving as a master delay.* |
| **m_Mod** | *Scales both modulation amounts, effectively serving as a... you guessed it.* |

# Eclipse Algorithms Manual

**m_Pan**   *Scales both pitchshifter pans, effectively serving as an image spread control.*

| Cal | |
|---|---|
| **Tune** | *Controls the detector's calibration, allowing for deviation from A-440 tuning.* |
| **Key** | *Selects the key that the detector references (if a scale is in fact selected under Scale).* |
| **Scale** | *Selects the scale that the detector references.* |
| **Quant** | *Determines the level of "quantization", or how close the Eclipse will bring an "off" note to "perfection".* |
| **LowNote** | *Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results.* |
| **XFade** | *Controls the crossfade between old pitchshift values and new pitchshift values.* |
| **Glide** | *Controls how quickly the shifter slides between shift values.* |

| Shift^(x = 1, 2) | |
|---|---|
| **Pitch x** | *Controls the amount of pitchshift effect for pitchshifter x.* |
| **Mod x** | *Controls the amount of pitch modulation for a vibrato effect.* |
| **Manual_M** | *Allows users without an external pedal to modulate the effect from the front panel.* |
| **Delay x** | *Either reflects the physical delay time as entered by T_Delayx (given the current tempo) or allows you to enter the delay time in milliseconds .* |
| **T_Delay x** | *Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |

| UsrScale |
|---|

*Two user scales may be defined here. User scale 1 and User scale 2 are selected for each voice with the Pitch x parameter (see above). The User Scale 1 and User Scale 2 settings appear at the end of the list of the Pitch x controls.*

**C, C#, etc**   Sets the interval to be shifted for each note in the selected scale. The incoming note is always conformed to the selected key and scale before looking up the shift interval in the User Scale settings. The actual audio will not be conformed to the chosen scale unless the **Quant** parameter is enabled. On any note, if no harmony is desired simply set that interval to 0 cents. To emulate the H3000 User define scales, be sure to select the chromatic scale.

For example, if you set E to +300 cents and F to +500 cents with the scale set to chromatic, when you trill between E and F, the Eclipse will trill between G and Bb. If you set E to +300 cents and F# to +500 cents with the scale set to D major and quantization at 0%, when you trill between E and F, the Eclipse will trill between G and Bb (F is quantized to F# before looking up the user interval), and when you trill between F and F#, Eclipse will trill between Bb and B. If you set E to +300 cents and F# to +500 cents with the scale set to D major and quantization set to 100%, when you trill between E and F, the Eclipse will trill between G and B (F is quantized to F# before looking up the user interval, and shifted up to F# before applying the user defined interval), and when you trill between F and F#, Eclipse will produce a B for both input notes.

| LFO | |
|---|---|
| **Mode** | *Selects whether the LFO will modulate each shifter in phase ("lfo sync") or out of phase ("lfo oppose"). Also allows an external source to modulate the shifters ("manual/ext").* |
| **Rate** | *Controls the modulation rate if T_Rate is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo.* |
| **T_Rate** | *Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off".* |
| **Shape** | *Determines the shape of the modulating signal.* |
| **Duty** | *Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall).* |

| Retrig | Whenever *Rate* is changed (either manually or by updating the tempo), the new *Rate* is crossfaded with the old *Rate*. The value of *Retrig* controls how long the crossfade is as a percentage of the old *Rate*. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old *Rate*. |
|---|---|
| Angle | Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. *Angle* determines where in its waveform the modulation begins. |

### Mix^(x = 1, 2)

| Level x | Controls the output level of pitch shifter x. |
|---|---|
| Pan x | Controls the stereo placement of pitch shifter x. |
| Fback x | Controls how much of pitch shifter x's output is reapplied to its input. |

## multishift 2

*(164  MultiShift2)*

A single two-voice, non-diatonic shifter whose feedback path is the sum of both outputs, with 'master' and individual parameters. *LFO* and external modulation are available.
*Summed in, stereo out*

See "diatonic 2" above for diagram.

### Masters

| Send | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
|---|---|
| m_Level | Scales both pitchshifter levels, effectively serving as a master volume. |
| m_Pitch | Scales both pitch shift amounts, effectively serving as a master pitch. |
| m_Mod | Scales both modulation amounts, effectively serving as a master modulation amount. |
| m_Dly | Scales both delay times, effectively serving as a master delay. |
| m_Pan | Scales both pitchshifter pans, effectively serving as an image spread control. |

#### Cal

| LowNote | Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results. |
|---|---|
| XFade | Controls the crossfade between old pitchshift values and new pitchshift values. |

### Shift^(x = 1, 2)

| Pitch x | Controls the amount of pitchshift effect for pitchshifter x. |
|---|---|
| Mod x | Controls the amount of pitch modulation for a vibrato effect. |
| Delay x | Either reflects the physical delay time as entered by T_Delayx (given the current tempo) or allows you to enter the delay time in milliseconds . |
| T_Delay x | Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off". |
| Manual_M | Allows users without an external pedal to modulate the effect from the front panel. |

### LFO

| Mode | Selects whether the LFO will modulate each shifter in phase ("lfo sync") or out of phase ("lfo oppose"). Also allows an external source to modulate the shifters ("manual/ext"). |
|---|---|
| Rate | Controls the modulation rate if T_Rate is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo. |
| T_Rate | Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off". |
| Shape | Determines the shape of the modulating signal. |

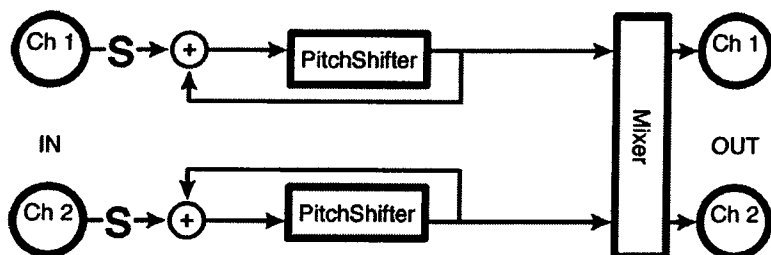| | |
|---|---|
| *Duty* | *Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall).* |
| *Retrig* | *Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate.* |
| *Angle* | *Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins.* |

### Mix^(x = 1, 2)

| | |
|---|---|
| *Level x* | *Controls the output level of pitch shifter x.* |
| *Pan x* | *Controls the stereo placement of pitch shifter x.* |
| *Fback x* | *Controls how much of pitch shifter x's output is reapplied to its input.* |

## dual diatonic

*(165   DualDiatonic)*

Here we have dual two-voice diatonic shifters with individual feedback paths as well as 'master' and individual channel parameters.

*Stereo in, stereo out*



### Masters

| | |
|---|---|
| *Send* | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| *m_Level* | *Scales both pitchshifter levels, effectively serving as a master volume.* |
| *m_Dly* | *Scales both delay times, effectively serving as a master delay.* |
| *m_Mod* | *Scales both modulation amounts, effectively serving as a... you guessed it.* |
| *m_Pan* | *Scales both pitchshifter pans, effectively serving as an image spread control.* |

### Cal

| | |
|---|---|
| *Tune* | *Controls the detector's calibration, allowing for deviation from A-440 tuning.* |
| *Key* | *Selects the key that the detector references (if a scale is in fact selected under Scale).* |
| *Scale* | *Selects the scale that the detector references.* |
| *Quant* | *Determines the level of "quantization", or how close the Eclipse will bring an "off" note to "perfection".* |
| *LowNote* | *Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results.* |
| *XFade* | *Controls the crossfade between old pitchshift values and new pitchshift values.* |
| *Glide* | *Controls how quickly the shifter slides between shift values.* |

## Shift^(x = 1, 2)

**Pitch x**   Controls the amount of pitchshift effect for pitchshifter x.

**Mod x**   Controls the amount of pitch modulation for a vibrato effect.

**Manual_M**   Allows users without an external pedal to modulate the effect from the front panel.

**Delay x**   Either reflects the physical delay time as entered by T_Delayx (given the current tempo) or allows you to enter the delay time in milliseconds .

**T_Delay x**   Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".

## UsrScale

Two user scales may be defined here.  User scale 1 and User scale 2 are selected for each voice with the Pitch x parameter (see above).  The User Scale 1 and User Scale 2 settings appear at the end of the list of the Pitch x controls.

**C, C#, etc**   Sets the interval to be shifted for each note in the selected scale.  The incoming note is always conformed to the selected key and scale before looking up the shift interval in the User Scale settings.  The actual audio will not be conformed to the chosen scale unless the **Quant** parameter is enabled.  On any note, if no harmony is desired simply set that interval to 0 cents.  To emulate the H3000 User define scales, be sure to select the chromatic scale.

For example, if you set E to +300 cents and F to +500 cents with the scale set to chromatic, when you trill between E and F, the Eclipse will trill between G and Bb.  If you set E to +300 cents and F# to +500 cents with the scale set to D major and quantization at 0%, when you trill between E and F, the Eclipse will trill between G and Bb (F is quantized to F# before looking up the user interval), and when you trill between F and F#, Eclipse will trill between Bb and B.  If you set E to +300 cents and F# to +500 cents with the scale set to D major and quantization set to 100%, when you trill between E and F, the Eclipse will trill between G and B (F is quantized to F# before looking up the user interval, and shifted up to F# before applying the user defined interval), and when you trill between F and F#, Eclipse will produce a B for both input notes.

## LFO

**Mode**   Selects whether the LFO will modulate each shifter in phase ("lfo sync") or out of phase ("lfo oppose"). Also allows an external source to modulate the shifters ("manual/ext").

**Rate**   Controls the modulation rate if T_Rate is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo.

**T_Rate**   Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off".

**Shape**   Determines the shape of the modulating signal.

**Duty**   Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall).

**Retrig**   Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate.

**Angle**   Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins.

## Mix^(x = 1, 2)

**Level x**   Controls the output level of pitch shifter x.

**Pan x**   Controls the stereo placement of pitch shifter x.

**Fback x**   Controls how much of pitch shifter x's output is reapplied to its input.

## dual multishift

*(166   DualMultishift)*

This algorithm offers dual two-voice non-diatonic shifters with individual feedback paths as well as 'master' and individual channel parameters.

*Stereo in, stereo out*

See "dual diatonic" above for diagram.

### Masters

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **m_Level** | Scales both pitchshifter levels, effectively serving as a master volume. |
| **m_Pitch** | Scales both pitch shift amounts, effectively serving as a master pitch. |
| **m_Mod** | Scales both modulation amounts, effectively serving as a master modulation amount. |
| **m_Dly** | Scales both delay times, effectively serving as a master delay. |
| **m_Pan** | Scales both pitchshifter pans, effectively serving as an image spread control. |

### Cal

| | |
|---|---|
| **LowNote** | Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results. |
| **XFade** | Controls the crossfade between old pitchshift values and new pitchshift values. |

### Shift^(x = 1, 2)

| | |
|---|---|
| **Pitch x** | Controls the amount of pitchshift effect for pitchshifter x. |
| **Mod x** | Controls the amount of pitch modulation for a vibrato effect. |
| **Delay x** | Either reflects the physical delay time as entered by T_Delayx (given the current tempo) or allows you to enter the delay time in milliseconds . |
| **T_Delay x** | Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off". |
| **Manual_M** | Allows users without an external pedal to modulate the effect from the front panel. |

### LFO

| | |
|---|---|
| **Mode** | Selects whether the LFO will modulate each shifter in phase ("lfo sync") or out of phase ("lfo oppose"). Also allows an external source to modulate the shifters ("manual/ext"). |
| **Rate** | Controls the modulation rate if T_Rate is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo. |
| **T_Rate** | Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off". |
| **Shape** | Determines the shape of the modulating signal. |
| **Duty** | Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall). |
| **Retrig** | Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate. |
| **Angle** | Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins. |

### Mix^(x = 1, 2)

| | |
|---|---|
| **Level x** | Controls the output level of pitch shifter x. |

***Pan x***     *Controls the stereo placement of pitch shifter x.*
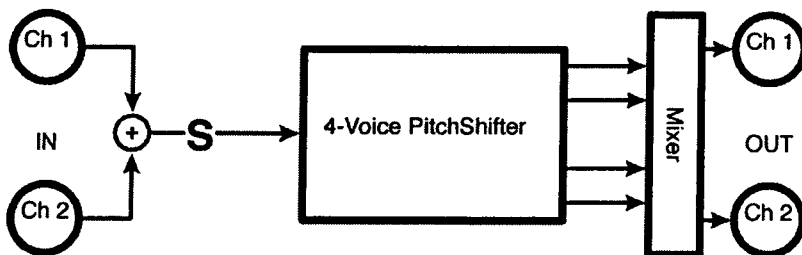
***Fback x***   *Controls how much of pitch shifter x's output is reapplied to its input.*

## diatonic 4

*(167   DiatonicShift4)*

This single four-voice diatonic shifter has 'master' and individual parameters (except 'pitch').
*Summed in, stereo out*



### Masters

***Send***     *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.*

***m_Level***  *Scales both pitchshifter levels, effectively serving as a master volume.*

***m_Dly***    *Scales both delay times, effectively serving as a master delay.*

***m_Pan***    *Scales both pitchshifter pans, effectively serving as an image spread control.*

### Cal

***Tune***     *Controls the detector's calibration, allowing for deviation from A-440 tuning.*

***Key***      *Selects the key that the detector references (if a scale is in fact selected under Scale).*

***Scale***    *Selects the scale that the detector references.*

***Quant***    *Determines the level of "quantization", or how close the Eclipse will bring an "off" note to "perfection".*

***LowNote***  *Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results.*

***XFade***    *Controls the crossfade between old pitchshift values and new pitchshift values.*

***Glide***    *Controls how quickly the shifter slides between shift values.*

### Shift^(x = 1, 2, 3, 4)

***Pitchx***   *Controls the amount of pitchshift effect for pitchshifter x.*

***Modx***     *Controls the amount of pitch modulation for a vibrato effect.*

***Manual_M*** *Allows users without an external pedal to modulate the effect from the front panel.*

***Delayx***   *Either reflects the physical delay time as entered by T_Delayx (given the current tempo) or allows you to enter the delay time in milliseconds .*

***T_Delayx*** *Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".*

### UsrScale

*Two user scales may be defined here.  User scale 1 and User scale 2 are selected for each voice with the Pitch x parameter (see above).  The User Scale 1 and User Scale 2 settings appear at the end of the list of the Pitch x controls.*

*C, C#, etc*   Sets the interval to be shifted for each note in the selected scale. The incoming note is always conformed to the selected key and scale before looking up the shift interval in the User Scale settings. The actual audio will not be conformed to the chosen scale unless the *Quant* parameter is enabled. On any note, if no harmony is desired simply set that interval to 0 cents. To emulate the H3000 User define scales, be sure to select the chromatic scale.

For example, if you set E to +300 cents and F to +500 cents with the scale set to chromatic, when you trill between E and F, the Eclipse will trill between G and Bb. If you set E to +300 cents and F# to +500 cents with the scale set to D major and quantization at 0%, when you trill between E and F, the Eclipse will trill between G and Bb (F is quantized to F# before looking up the user interval), and when you trill between F and F#, Eclipse will trill between Bb and B. If you set E to +300 cents and F# to +500 cents with the scale set to D major and quantization set to 100%, when you trill between E and F, the Eclipse will trill between G and B (F is quantized to F# before looking up the user interval, and shifted up to F# before applying the user defined interval), and when you trill between F and F#, Eclipse will produce a B for both input notes.

| $Mix^\wedge(x = 1, 2, 3, 4)$ |
| --- |

**Level x**   Controls the output level of pitch shifter x.

**Pan x**   Controls the stereo placement of pitch shifter x.

# multishift 4

*(168  MultiShift4)*

A single four voice non-diatonic shifter with 'master' and individual parameters.
*Summed in, stereo out*

| See "diatonic 4" above for diagram. |
| --- |

| *Masters* |
| --- |

**Send**   Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.

**m_Level**   Scales both pitchshifter levels, effectively serving as a master volume.

**m_Pitch**   Scales both pitch shift amounts, effectively serving as a master pitch.

**m_Dly**   Scales both delay times, effectively serving as a master delay.

**m_Pan**   Scales both pitchshifter pans, effectively serving as an image spread control.

| *Cal* |
| --- |

**LowNote**   Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results.

**XFade**   Controls the crossfade between old pitchshift values and new pitchshift values.

| $Shift^\wedge(x = 1, 2)$ |
| --- |

**Pitch x**   Controls the amount of pitchshift effect for pitchshifter x.

**Delay x**   Either reflects the physical delay time as entered by T_Delayx (given the current tempo) or allows you to enter the delay time in milliseconds .

**T_Delay x**   Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".

**Manual_M**   Allows users without an external pedal to modulate the effect from the front panel.

| $Mix^\wedge(x = 1, 2)$ |
| --- |

**Level x**   Controls the output level of pitch shifter x.

**Pan x**   Controls the stereo placement of pitch shifter x.

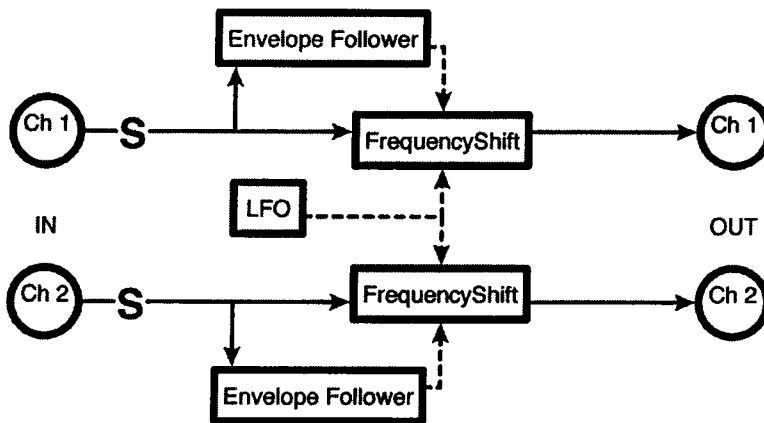## dual modfreqshift

*(170  ModFreqShift)*

This two-channel algorithm contains sweepable ring modulators, controlled by 'master' and individual channel parameters. The 'mode' selector allows the modulation source to be selected from *LFO*, envelope or pedal.

*Stereo in, stereo out*



### Master

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **Mix** | Determines the wet (ring mod) to dry ratio for both rings (you can overwrite this value under Ring#1 or Ring#2. |
| **Mode** | Selects whether the LFO, the envelope generator, or an external pedal will modulate both rings (you can overwrite this value under Ring#1 or Ring#2). |
| **m_Rate** | Scales the individual LFO rates. |
| **m_Ring** | Scales the individual ring amounts. |
| **m_Mod** | Scales the individual modulation amounts. |
| **Man_Ped** | Allows users without an external pedal to modulate the effect from the front panel. |

### Env/LFO

| | |
|---|---|
| **Env** | Determines which input or inputs the envelope follower will track. |
| **Sens** | Controls how sensitive the envelope follower is; alter this parameter to match the average input level to the amount of modulation desired. |
| **Attack** | Controls how quickly the envelope follower will track an increase at its input. |
| **Decay** | Controls how quickly the envelope follower will track a decrease at its input. |
| **Shape** | Determines the shape of the modulating signal. |
| **Duty** | Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall). |
| **Retrig** | Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate. |
| **Angle** | Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins. |

# Eclipse Algorithms Manual

| Ring#1 | |
|---|---|
| Mix1 | Determines the wet (ring mod) to dry ratio for ring 1 (you can overwrite this value under Master). |
| Mode1 | Selects whether the LFO, the envelope generator, or an external pedal will modulate ring 1 (you can overwrite this value under Master). |
| Rate1 | Controls the modulation rate for ring 1 if T_Rate1 is set to "off" or reflects the physical modulation rate as selected by T_Rate1 and the system tempo. |
| T_Rate | Controls the modulation rate on ring 1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off". |
| Ring1 | Either reflects the physical ring depth as entered by T_Ring1 (given the current tempo) or allows you to enter the ring depth in Hertz if T_Ring1 is set to "Off". |
| T_Ring1 | Controls ring depth 1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic ring depth generation "off". The actual ring depth displayed under Ring1 is a function of this control and the current system tempo. |
| RMod1 | Controls how much the ring depth varies in response to the modulation source. |
| Man_Ped1 | Allows users without an external pedal to modulate the effect from the front panel. |

| Ring#2 | |
|---|---|

*Parameters analogous to Ring#1.*

## verbs

*A* diffusor *creates a dense field of delay repeats that is typically used to create* reverberator *structures - it may also be thought of as essentially a chain of series-connected* allpass *filters.*
*A* reverb *proper usually consists of a* pre-delay, *to give early reflections, followed by a number of reverb lines, which are delay sections with multiple feedback loops. Usually, a reverb with more lines will be smoother and more natural sounding.*

## reverb 8

*(174 Reverb 8)*

A short reverb with eight 200-mS lines. Decay time is controlled by tempo.
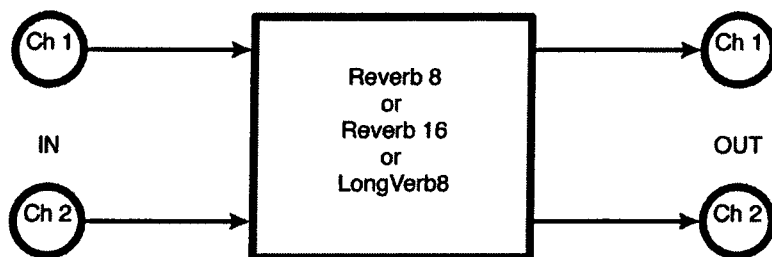*Stereo in, stereo out*

See "long reverb 8" above for diagram and parameters.

## long reverb 8

*(175 LongVerb8 )*

This reverb has a long decay with eight two-second lines. Decay time is controlled by tempo *(rdecay)*.
*Stereo in, stereo out*



| *Verb* | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **R Level** | *Controls the output level.* |
| **RDecay** | *Either reflects the physical reverb decay as entered by T_RDecay (given the current tempo) or allows you to enter the reverb decay in seconds if T_RDecay is set to "Off".* |
| **T_RDecay** | *Controls the reverb decay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic decay generation "off".* |
| **RSize** | *Controls the reverb's room size by scaling the actual delay times.* |
| **PreDly** | *Controls how long the predelay is. Predelay is inserted before the reverb because in a real room, reverb arrives at a listener's ears some time after the dry sound. The larger the room, the longer the lag.* |
| **HiCut** | *Controls the cut of a high-frequency shelving EQ.* |
| **LowCut** | *Controls the cut of a low-frequency shelving EQ.* |
| **HiFreq** | *Controls the frequency at which the high-frequency shelving EQ begins to act.* |
| **LowFreq** | *Controls the frequency at which the low-frequency shelving EQ begins to act.* |

| | |
|---|---|
| **Depth** | Controls how much individual delay times will vary in response to the LFO controlled by Rate. Determines the "thickness" of the chorus effect. |
| **Rate** | Scales each delay's LFO rate, effectively serving as a master rate. |
| **Span** | Scales each delay's pan setting, effectively controlling the image width. |
| **Glide** | Controls how quickly delay times arrive at new values when individual delay times are adjusted (either directly or via RSize). |

## reverb 16

*(176   Reverb 16)*

A dense reverb with sixteen 200-mS lines. Decay time is controlled by tempo.
*Stereo in, stereo out*

See "long reverb 8" above for diagram and parameters.

## dense room 8

*(177   DenseRoom 8)*

This reverb is similar to "dense room 16," above, with only eight reverb lines.
*Stereo in, stereo out*

See "dense room 16" above for diagram and parameters.

## dense room 16

*(178   DenseRoom16)*

This dense reverb offers a stereo 200-mS predelay to give early reflection signals. The predelay also feeds two four-part 500-mS diffusors which in turn feed a reverb with sixteen 200-ms lines. (This is an extension of the popular Eventide H3000 structure.) The final out put is a mix of the predelay signals (*early*), the diffusor output (*position*) and the reverb output. Decay time is controlled by tempo.
*Stereo in, stereo out*



| | |
|---|---|
| *Verb* | |
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **R Level** | Controls the output level. |
| **Early** | Controls the level of the pre-delay signal, utilized as an early reflection (in a real room, the first, relatively coherent reflection off of the nearest surface). |

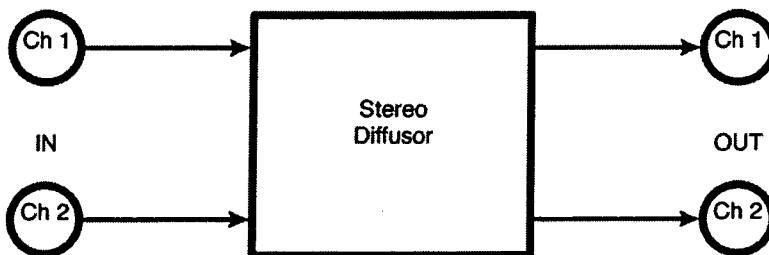| | |
|---|---|
| **Position** | Controls the apparent position in the "room", or how deep you are into the reverberant field. |
| **Diffusion** | A master feedback control for the diffusors, controlling their "fuzziness" or "distinctness." |
| **DSize** | Controls the diffusor's "size" by scaling its delay times. |
| **RDecay** | Either reflects the physical reverb decay as entered by T_RDecay (given the current tempo) or allows you to enter the reverb decay in seconds if T_RDecay is set to "Off". |
| **T_RDecay** | Controls the reverb decay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic decay generation "off". |
| **RSize** | Controls the reverb's room size by scaling the actual delay times. |
| **PreDly** | Controls how long the predelay is. Predelay is inserted before the reverb because in a real room, reverb arrives at a listener's ears some time after the dry sound. The larger the room, the longer the lag. |
| **HiCut** | Controls the cut of a high-frequency shelving EQ. |
| **LowCut** | Controls the cut of a low-frequency shelving EQ. |
| **HiFreq** | Controls the frequency at which the high-frequency shelving EQ begins to act. |
| **LowFreq** | Controls the frequency at which the low-frequency shelving EQ begins to act. |
| **Depth** | Controls how much individual delay times will vary in response to the LFO controlled by Rate. Determines the "thickness" of the chorus effect. |
| **Rate** | Scales each delay's LFO rate, effectively serving as a master rate. |
| **Span** | Scales each delay's pan setting, effectively controlling the image width. |
| **Glide** | Controls how quickly delay times arrive at new values when individual delay times are adjusted (either directly or via RSize). |

## s_diffusor

*(180  St Diffusor)*

This algorithm contains two four-part 500-mS diffusors.
*Stereo in, stereo out*



### Verb

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **Level** | Controls the output level. |
| **Diffusion** | A master feedback control for the diffusors, controlling their "fuzziness" or "distinctness." |
| **DSize** | Controls the diffusor's "size" by scaling its delay times. |

## diffchorus

*(181   Diffchorus)*

This algorithm contains two four-part 500-mS diffusors with internal modulation to randomize the effect. An adjustable high-cut filter may be used to smooth out the result.
*Stereo in, stereo out*



### Diffusor

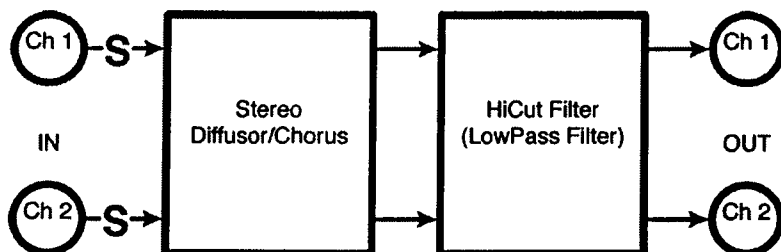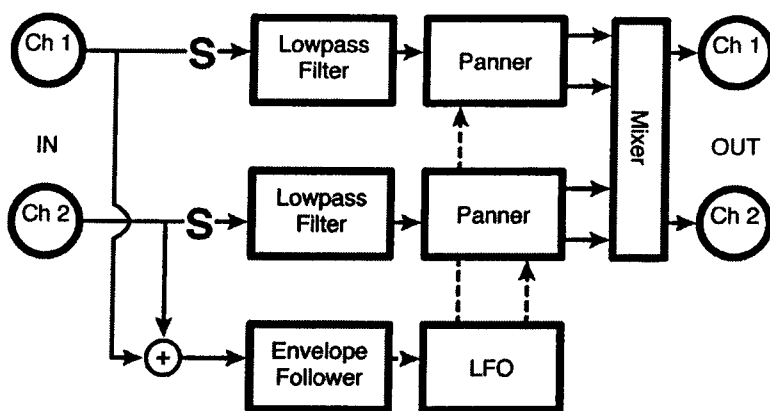| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **Level** | *Controls the output level.* |
| **Diffusion** | *A master feedback control for the diffusors, controlling their "fuzziness" or "distinctness."* |
| **DSize** | *Controls the diffusor's "size" by scaling its delay times.* |
| **Depth** | *Controls how much individual delay times will vary in response to the LFO controlled by Rate. Determines the "thickness" of the chorus effect.* |
| **Rate** | *Scales each delay's LFO rate, effectively serving as a master rate.* |
| **HiCut** | *Controls the cutoff frequency of a gentle low-pass filter.* |
| **Span** | *Scales each delay's pan setting, effectively controlling the image width.* |
| **Glide** | *Controls how quickly delay times arrive at new values when individual delay times are adjusted (either directly or via RSize).* |

## combos

### fm modfilter/pan

*(152   FmFilterPan)*

This algorithm consists of a modulated filter feeding a panner. The modulation source for both the filter and the panner is controlled by the envelope of the input.

*Stereo in, stereo out*



### Filt/Pan

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **Level** | *Controls the output level of the filter..* |
| **Freq** | *Controls the "baseline" center frequency or cutoff frequency.* |
| **Fmod** | *Controls how far from the "baseline" the cutoff frequency will deviate in response to the modulation signal.* |
| **Q** | *Controls the "baseline" bandwidth or resonance.* |
| **Qmod** | *Controls how far from the "baseline" the Q will deviate in response to the modulation signal.* |
| **Pan** | *Determines if the modulation will work in phase ("sync") or out of phase ("oppose").* |

### LFO

| | |
|---|---|
| **Rate** | *Controls the modulation rate if T_Rate1 is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo.* |
| **T_Rate** | *Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off".* |
| **FMRate** | *Analogous to Rate, except that this pertains to modulation of the LFO's signal (not to modulation of the panner directly).* |
| **T_FMRate** | *Analogous to T_Rate, except that this pertains to modulation of the LFO's signal (not to modulation of the panner directly).* |
| **Shape** | *Determines the shape of the modulating signal.* |
| **Duty** | *Controls the "duty cycle" of the modulating wave for any waveform other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall).* |

**Polarity**　When set to "unipolar", modulations add the value of Fmod to Freq. When set to "bipolar", modulations add the value of Fmod to Freq and subtract the value of Fmod from Freq (the same goes for Q and Qmod).

**Retrig**　Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate.

**Angle**　Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins.
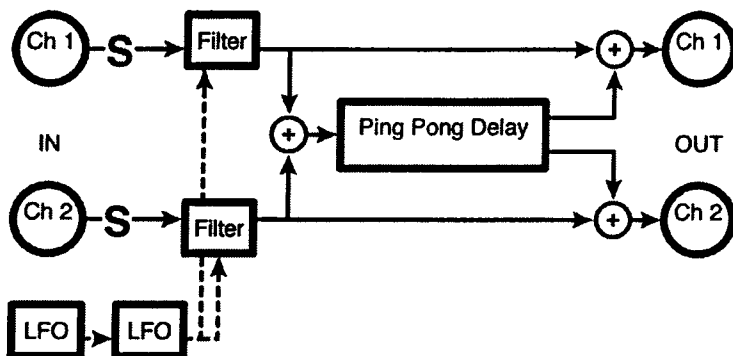
| *Env* | |
|---|---|

**Sens**　Controls how sensitive the envelope follower is; alter this parameter to change the "depth" of the FM effect.

**Attack**　Controls how fast the envelope follower will track an increase in volume.

**Decay**　Controls how fast the envelope follower will track a decrease in volume.

| ## *LFO* filter+pingpong | |
|---|---|

*(153　LfoFilter+Pong)*

This effect consists of two filters modulated by two *LFOs*. The first LFO controls the rate of modulation, while the second controls the depth of that modulation, giving a sort of vintage synth effect. The stereo output of these filters is then mixed with the dry input signal, and summed to feed a ping-pong delay with pre-delay. Tempo controls rates and delay times.

*Stereo in, stereo out*



| *Mod^(x = 1, 2)* | |
|---|---|

**Rate x**　Controls LFO x's modulation rate if T_Ratex is set to "off" or reflects the physical LFO modulation rate as selected by T_Ratex and the system tempo.

**T_Rate x**　Controls LFO x's modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic LFO modulation generation "off".

**Wave x**　Determines the shape of filter x's modulating signal.

**Retrig**　Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate.

**Angle**　Given most configurations of the Eclipse, the LFOs will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in their waveform the LFOs begin.

| *Filter* | |
|---|---|

**Send**　Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.

| Mix | Controls the ratio between the dry and wet (filtered) signal. |
|---|---|
| Freq | Controls the "baseline" cutoff frequency. |
| Fmod | Controls how far from the "baseline" the cutoff frequency will deviate in response to the modulation signal. |
| Q | Controls the "baseline" resonance. |
| Qmod | Controls how far from the "baseline" the Q will deviate in response to the modulation signal. |

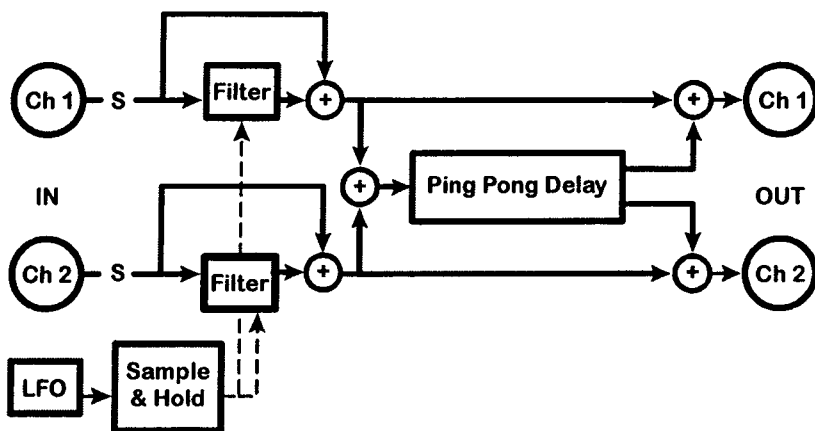### Delays

| Level | Controls the output level of the ping pong delay. |
|---|---|
| PDelay | Either reflects the physical pre-delay time as entered by T_PDelay (given the current tempo) or allows you to enter the pre-delay time in milliseconds if T_PDelay is set to "Off". |
| T_PDelay | Controls the pre-delay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic pre-delay generation "off". |
| Pong | Either reflects the physical pong time as entered by T_Pong (given the current tempo) or allows you to enter the pong time in milliseconds if T_Pong is set to "Off". |
| T_Pong | Controls the pong in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic pong generation "off". The actual pong time displayed under Pong is a function of this control and the current system tempo. |
| FBack | Controls how much of the pong's output is reapplied to its input. |

## s/h filter+pingpong

*(154  S/HFilter+Pong)*

The output of stereo sample-and-hold filters is mixed with the dry input signal, and are also summed to feed a ping-pong delay with pre-delay. Tempo controls rates and delay times.
*Stereo in, stereo out*



### S/H

| Send | Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
|---|---|
| Mix | Controls the ratio between the dry and wet (S/H) signal. |
| F Min | Sets the minimum frequency for the Sample and Hold. |
| F Max | Sets the maximum frequency for the Sample and Hold. |
| Reson | Controls the filter resonance. |
| Flux | Controls how quickly the filter moves between "notes". |

*Rate* Controls the modulation rate if T_Rate is set to "off" or reflects the physical modulation rate as selected by T_Rate and the system tempo.

*T_Rate* Controls the modulation rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic modulation generation "off".

*Retrig* Whenever Rate is changed (either manually or by updating the tempo), the new Rate is crossfaded with the old Rate. The value of Retrig controls how long the crossfade is as a percentage of the old Rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old Rate.

*Angle* Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins.
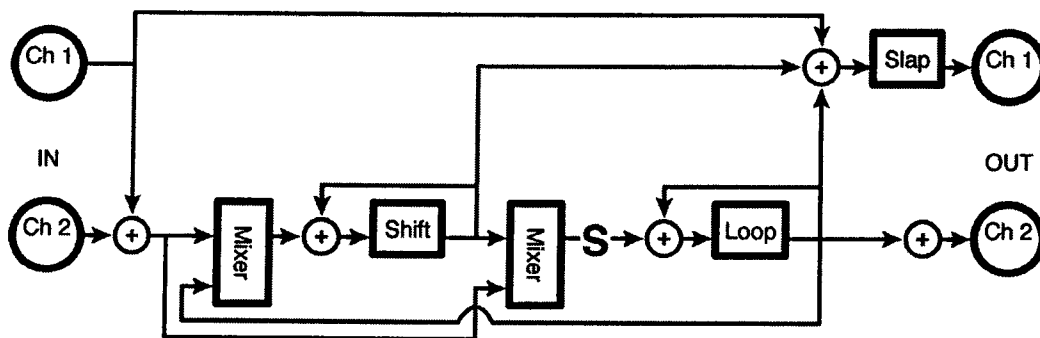
---

### Delays

*Level* Controls the output level of the ping pong delay.

*PDelay* Either reflects the physical pre-delay time as entered by T_PDelay (given the current tempo) or allows you to enter the pre-delay time in milliseconds if T_PDelay is set to "Off".

*T_PDelay* Controls the pre-delay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic pre-delay generation "off".

*Pong* Either reflects the physical pong time as entered by T_Pong (given the current tempo) or allows you to enter the pong time in milliseconds if T_Pong is set to "Off".

*T_Pong* Controls the pong in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic pong generation "off".

*FBack* Controls how much of the pong's output is reapplied to its input.

---

## manifold alpha

*(155  ManifoldAlpha)*

This is a pitch-shifting loop and slap delay. A mixer at the shifter input selects between the source and the loop signals, while another mixer at the loop input selects between the source and the shifted signals. Both outputs (pitch and loop) are then mixed with the left input (channel #1) and fed to the slap delay output on the left side, while the loop and pitch also get fed directly to the right output. Tempo may be used to control delay as well as loop and slap length.

*Summed in, stereo out*



---

### Shift

*S InMix* Controls what percentage of the pitchshifter's input comes from the right input ("0%") and what percentage comes from the loop output ("100%").

*S Input* Controls the input level to the pitchshifter.

*S Level* Controls the output level of the pitchshifter.

*Pitch* Controls the amount of pitchshifting.

---

| *Delay* | Either reflects the pitchshifter's physical delay time as entered by T_Delay (given the current tempo) or allows you to enter the delay time in milliseconds if T_Delay is set to "Off". |
| *T_Delay* | Controls the pitchshifter delay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off". |
| *S Fback* | Controls how much of the pitchshifter's output is reapplied to its input. |
| *LowNote* | Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results. |
| *Delay* | Controls the crossfade between old pitchshift values and new pitchshift values. |

### Loop

| *Send* | Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| *L InMix* | Controls what percentage of the loop's input comes from the right input ("0%") and what percentage comes from the pitchshifter output ("100%"). |
| *L Input* | Controls the input level to the loop. |
| *L Level* | Controls the output level of the loop. |
| *Loop* | Either reflects the physical loop time as entered by #Bars (given the current tempo) or allows you to enter the loop time in milliseconds if #Bars is left untouched and the system tempo is not updated (it's better to use #Bars, OK?). |
| *#Bars* | Controls the length of the loop in terms of bars. The actual loop time displayed under Loop is a function of this control and the current system tempo. |
| *L Fback* | Controls how much of the loop's output is reapplied to its input. |

### Slap

| *D Level* | Controls the output level of the slap delay. |
| *Delay* | Either reflects the physical delay time as entered by T_Delay (given the current tempo) or allows you to enter the delay time in milliseconds if T_Delay is set to "Off". |
| *T_Delay* | Controls the delay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off". The actual delay time displayed under Delay is a function of this control and the current system tempo. |

## manifold beta

*(156  ManifoldBeta)*

This algorithm is essentially a version of "manifold alpha," but it uses a reverse shifter rather than the normal (forward) pitch shifter.
*Summed in, stereo out*

### Reverse

| *S InMix* | Controls what percentage of the pitchshifter's input comes from the right input ("0%") and what percentage comes from the loop output ("100%"). |
| *S Input* | Controls the input level to the pitchshifter. |
| *S Level* | Controls the output level of the pitchshifter. |
| *Pitch* | Controls the amount of pitchshifting. |
| *Length* | Either reflects the pitchshifter's physical delay time as entered by T_Delay (given the current tempo) or allows you to enter the delay time in milliseconds if T_Delay is set to "Off". |
| *T_Length* | Controls the pitchshifter delay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off". |

| | |
|---|---|
| ***Delay*** | *Controls the pitchshifting delay (typically very short).* |
| ***S Fback*** | *Controls how much of the pitchshifter's output is reapplied to its input.* |
| ***LowNote*** | *Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results.* |
| ***Delay*** | *Controls the crossfade between old pitchshift values and new pitchshift values.* |

## Loop

| | |
|---|---|
| ***Send*** | *Adjusts the level at 'S' in the diagram. If you want to modulate the input to the loop with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| ***L InMix*** | *Controls what percentage of the loop's input comes from the right input ("0%") and what percentage comes from the pitchshifter output ("100%").* |
| ***L Input*** | *Controls the input level to the loop.* |
| ***L Level*** | *Controls the output level of the loop.* |
| ***Loop*** | *Either reflects the physical loop time as entered by #Bars (given the current tempo) or allows you to enter the loop time in milliseconds if #Bars is left untouched and the system tempo is not updated (it's better to use #Bars, OK?).* |
| ***#Bars*** | *Controls the length of the loop in terms of bars. The actual loop time displayed under Loop is a function of this control and the current system tempo.* |
| ***L Fback*** | *Controls how much of the loop's output is reapplied to its input.* |

## Slap

| | |
|---|---|
| ***D Level*** | *Controls the output level of the slap delay.* |
| ***Delay*** | *Either reflects the physical delay time as entered by T_Delay (given the current tempo) or allows you to enter the delay time in milliseconds if T_Delay is set to "Off".* |
| ***T_Delay*** | *Controls the delay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |

# dual comp/de-ess

*(157  VocalProcess)*

Here we have dual compressors feeding filters which then feed further compressors. It is set up as compressors into de-essers, and has 'master' as well as individual parameters.
*Stereo in, stereo out*
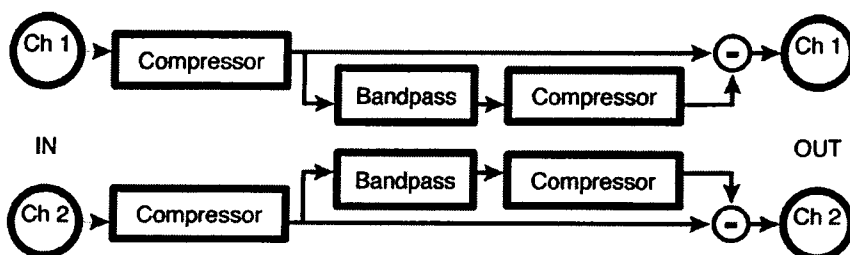


## Master

### M_Comp

| | |
|---|---|
| ***Thresh*** | *Sets the input threshold above which compression of the signal takes place and below which the signal is left alone.* |
| ***S Knee*** | *Controls the width of the "soft knee". The soft knee is a region above the threshold over which the ratio transitions from 1:1 to the selected Ratio. It smoothes out the compression.* |

| Ratio | Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input. |
|---|---|
| Gain | Adjusts the output level to improve gain structure. |
| Attack | Controls how quickly the compressor "clamps down" on a signal after it exceeds the threshold. |
| Decay | Controls how quickly the compressor "lets go" of a signal once it falls below the threshold. |
| GR 1 | Displays how much gain reduction (compression) is taking place after delay 1. |
| GR 2 | Displays how much gain reduction (compression) is taking place after delay 2. |

**M_Filter**

| Freq | Controls the center frequency of the filter used for frequency-conscious compression. |
|---|---|
| Q | Controls the bandwidth of the filter. |
| Type | Selects the type of filter used for frequency-conscious compression (this is usually set to "bandpass"). |

**M_D/S C^These controls affect the frequency-conscious compressor**

| D Thresh | Sets the input threshold above which frequency-conscious compression of the signal takes place and below which the signal is left alone. |
|---|---|
| D S Knee | Controls the width of the "soft knee". The soft knee is a region above the threshold over which the ratio transitions from 1:1 to the selected Ratio. It smoothes out the compression. |
| D Ratio | Controls the input to output ratio for signals above the threshold. For example, "6:1" produces 1dB of output for every 6dB of input. |
| D Gain | Adjusts the output level to improve gain structure. |
| D Attack | Controls how quickly the frequency-conscious compressor "clamps down" on a signal after it exceeds the threshold. |
| D Decay | Controls how quickly the frequency-conscious compressor "lets go" of a signal once it falls below the threshold. |
| D/S 1 | Displays how much frequency-conscious gain reduction (compression) is taking place after delay 1. |
| D/S 2 | Displays how much frequency-conscious gain reduction (compression) is taking place after delay 2. |

**Chan#1**

*Parameters similar to those described above, dedicated to compressor 1; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*

**Chan#2**

*Parameters similar to those described above, dedicated to compressor 2; changes made here can be overwritten by those made under Master and vice versa (the most recently entered value "wins")*
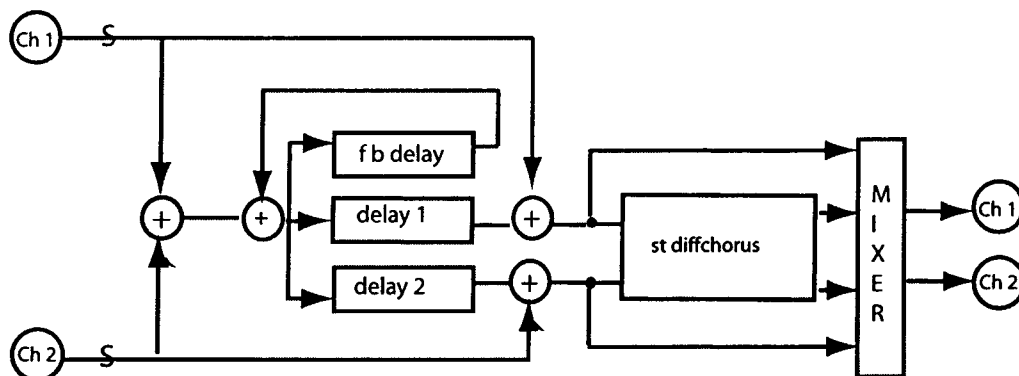
## delay_diffchorus

*(182 TapDly+Diffchrus)*

This is a three tap delay (left, right and feedback) and a stereo diffchorus.
*Stereo in, stereo out.*



### *Delay*

**Level**      Controls the two delays output level.

**T_Delay1**   Controls delay1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".

**T_Delay2**   Controls delay2 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".

**T_Fback**    Controls the fb delay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".

    **Delay1**   Controls delay1's delay time in ms values.

    **Delay2**   Controls delay1's delay time in ms values.

    **Fb Dly**   Controls the fb delay's delay time in ms values.

    **Fback**   Controls how much of the fb delays output is reapplied to the 3 delays inputs.

    **Send**   Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume Pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.

### *Diffusor*

    **R Level**   Controls the diffusors output level.

    **Diffusion**   A master feedback control for the diffusors, controlling their "fuzziness" or "distinctness."

    **DSize**   Controls the diffusor's "size" by scaling its delay times.

    **Depth**   Controls how much individual delay times will vary in response to the LFO controlled by Rate. Determines the "thickness" of the chorus effect.

    **Rate**   Scales each delay's LFO rate, effectively serving as a master rate.

    **Span**   Scales each delay's pan setting, effectively controlling the image width.

    **Glide**   Controls how quickly delay times arrive at new values when individual delay times are adjusted (either directly or via DSize).

## moddelays+verb8

*(183   Chordlys+Verb8)*

Four delays feed into an eight-line reverb. The tempo affects the delay times, sweep rate and reverb decay time (*rdecay*).
*Stereo in, stereo out*

### M_Delays

| | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **D Level** | *Controls the dry delay output level (but does not affect the delay level sent to the reverb).* |
| **Dly>Verb** | *Controls the delay level sent to the reverb (but does not affect the dry delay output level).* |
| **m_Delay** | *Scales all the individual delay times, effectively serving as a master delay (e.g. if the four delays are set to 200ms, 150ms, 100ms, and 50ms, setting M_Delay to 50% cuts those times in half (100ms, 75ms, 50ms, and 25ms)).* |
| **m_Depth** | *Scales all the individual delay sweep depths, effectively serving as a master depth.* |
| **m_Fback** | *Scales all the individual delay feedbacks, effectively serving as a master feedback.* |

### Delays^(x = 1, 2, 3, 4)

| | |
|---|---|
| **Delay x** | *Either reflects the physical delay time as entered by T_Delayx (given the current tempo) or allows you to enter the delay time in milliseconds .* |
| **T_Delay x** | *Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| **Fback x** | *Controls how much of delay x's output is reapplied to its input.* |

### Mods^(x = 1, 2, 3, 4)

| | |
|---|---|
| **Depth x** | *Controls the sweep depth of delay x.* |
| **Rate** | *Controls the sweep rate if T_Rate is set to "off" or reflects the physical sweep rate as selected by T_Rate and the system tempo.* |
| **T_Rate** | *Controls the sweep rate in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic sweep generation "off". The actual sweep rate displayed under Rate is a function of this control and the current system tempo.* |
| **Shape** | *Determines the shape of the modulating signal.* |
| **Retrig** | *Whenever the sweep rate is changed (either manually or by updating the tempo), the new rate is crossfaded with the old rate. The value of Retrig controls how long the crossfade is as a percentage of the old rate. Thus, a value of 100% means that the crossfade will be complete in one cycle of the old rate.* |
| **Angle** | *Given most configurations of the Eclipse, the modulation will "start over" when the tempo button is tapped or when an external sequence is started. Angle determines where in its waveform the modulation begins.* |

### Verb

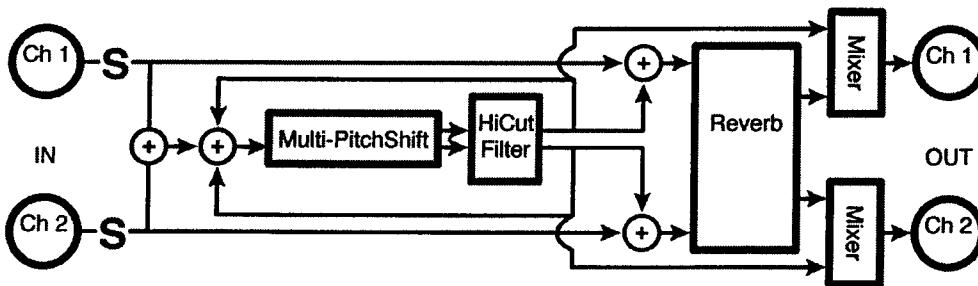| | |
|---|---|
| **R Level** | *Controls the reverb output level.* |
| **RDecay** | *Either reflects the physical reverb decay as entered by T_RDecay (given the current tempo) or allows you to enter the reverb decay in seconds if T_RDecay is set to "Off".* |
| **T_RDecay** | *Controls the reverb decay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic decay generation "off".* |
| **RSize** | *Controls the reverb's room size by scaling the actual delay times.* |
| **PreDly** | *Controls how long the predelay is. Predelay is inserted before the reverb because in a real room, reverb arrives at a listener's ears some time after the dry sound. The larger the room, the longer the lag.* |
| **HiCut** | *Controls the cut of a high-frequency shelving EQ.* |
| **LowCut** | *Controls the cut of a low-frequency shelving EQ.* |

| | |
|---|---|
| *HiFreq* | *Controls the frequency at which the high-frequency shelving EQ begins to act.* |
| *LowFreq* | *Controls the frequency at which the low-frequency shelving EQ begins to act.* |
| *Depth* | *Controls how much individual delay times will vary in response to the LFO controlled by Rate. Determines the "thickness" of the chorus effect.* |
| *Rate* | *Scales each delay's LFO rate, effectively serving as a master rate.* |
| *Span* | *Scales each delay's pan setting, effectively controlling the image width.* |
| *Glide* | *Controls how quickly delay times arrive at new values when individual delay times are adjusted (either directly or via RSize).* |

## multishift+verb8

*(184   Mshift+Reverb8)*

In this combination effect, a two-voice shifter feeds a reverb, with mixers at the reverb input and the final outputs. Tempo controls delay times and reverb decay times.
*Stereo in, stereo out*



### Masters

| | |
|---|---|
| *Send* | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| *S Level* | *Controls the dry pitchshifter output level (but does not affect the pitchshifter level sent to the reverb).* |
| *Mix>Verb* | *Controls the pitchshifter level sent to the reverb (but does not affect the dry pitchshifter output level).* |
| *S HiCut* | *Controls the cutoff frequency of a lowpass filter placed after the pitchshifter.* |

#### Cal

| | |
|---|---|
| *LowNote* | *Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results.* |
| *XFade* | *Controls the crossfade between old pitchshift values and new pitchshift values.* |

### Shift^(x = 1, 2)

| | |
|---|---|
| *Pitch x* | *Controls the amount of pitchshift effect for pitchshifter x.* |
| *Delay x* | *Either reflects the physical delay time as entered by T_Delayx (given the current tempo) or allows you to enter the delay time in milliseconds .* |
| *T_Delay x* | *Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| *Fback x* | *Controls how much of pitch shifter x's output is reapplied to its input.* |
| *Mod x* | *Controls the amount of pitch modulation for a vibrato effect.* |
| *Man_Mod x* | *Allows users without an external pedal to modulate the effect from the front panel.* |

### Verb

| | |
|---|---|
| *R Level* | *Controls the reverb output level.* |

| | |
|---|---|
| **RDecay** | Either reflects the physical reverb decay as entered by T_RDecay (given the current tempo) or allows you to enter the reverb decay in seconds if T_RDecay is set to "Off". |
| **T_RDecay** | Controls the reverb decay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic decay generation "off". |
| **RSize** | Controls the reverb's room size by scaling the actual delay times. |
| **PreDly** | Controls how long the predelay is. Predelay is inserted before the reverb because in a real room, reverb arrives at a listener's ears some time after the dry sound. The larger the room, the longer the lag. |
| **HiCut** | Controls the cut of a high-frequency shelving EQ. |
| **LowCut** | Controls the cut of a low-frequency shelving EQ. |
| **HiFreq** | Controls the frequency at which the high-frequency shelving EQ begins to act. |
| **LowFreq** | Controls the frequency at which the low-frequency shelving EQ begins to act. |
| **Depth** | Controls how much individual delay times will vary in response to the LFO controlled by Rate. Determines the "thickness" of the chorus effect. |
| **Rate** | Scales each delay's LFO rate, effectively serving as a master rate. |
| **Span** | Scales each delay's pan setting, effectively controlling the image width. |
| **Glide** | Controls how quickly delay times arrive at new values when individual delay times are adjusted (either directly or via RSize). |

## diatonic+verb8

*(185  Dshift+Reverb8)*

This algorithm is similar to "multishift+verb8," differing in that a two-voice diatonic shifter replaces the normal shifter.
*Stereo in, stereo out*

See "multishift+verb8" above for diagram.

### Masters

| | |
|---|---|
| **Send** | Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering. |
| **S Level** | Controls the dry pitchshifter output level (but does not affect the pitchshifter level sent to the reverb). |
| **Mix>Verb** | Controls the pitchshifter level sent to the reverb (but does not affect the dry pitchshifter output level). |

#### Cal

| | |
|---|---|
| **Tune** | Controls the detector's calibration, allowing for deviation from A-440 tuning. |
| **Key** | Selects the key that the detector references (if a scale is in fact selected under Scale). |
| **Scale** | Selects the scale that the detector references. |
| **Quant** | Determines the level of "quantization", or how close the Eclipse will bring an "off" note to "perfection". |
| **LowNote** | Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results. |
| **XFade** | Controls the crossfade between old pitchshift values and new pitchshift values. |
| **Glide** | Controls how quickly the shifter slides between shift values. |

### Shift^(x = 1, 2)

| | |
|---|---|
| **Pitch x** | Controls the amount of pitchshift effect for pitchshifter x. |
| **Delay x** | Either reflects the physical delay time as entered by T_Delayx (given the current tempo) or allows you to enter the delay time in milliseconds . |

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**T_Delay x**    *Controls delay x in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".*

**Mod x**    *Controls the amount of pitch modulation for a vibrato effect.*

**Man_Mod x** *Allows users without an external pedal to modulate the effect from the front panel.*

| Verb | |
|---|---|
| **R Level** | *Controls the reverb output level.* |
| **RDecay** | *Either reflects the physical reverb decay as entered by T_RDecay (given the current tempo) or allows you to enter the reverb decay in seconds if T_RDecay is set to "Off".* |
| **T_RDecay** | *Controls the reverb decay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic decay generation "off".* |
| **RSize** | *Controls the reverb's room size by scaling the actual delay times.* |
| **PreDly** | *Controls how long the predelay is. Predelay is inserted before the reverb because in a real room, reverb arrives at a listener's ears some time after the dry sound. The larger the room, the longer the lag.* |
| **HiCut** | *Controls the cut of a high-frequency shelving EQ.* |
| **LowCut** | *Controls the cut of a low-frequency shelving EQ.* |
| **HiFreq** | *Controls the frequency at which the high-frequency shelving EQ begins to act.* |
| **LowFreq** | *Controls the frequency at which the low-frequency shelving EQ begins to act.* |
| **Depth** | *Controls how much individual delay times will vary in response to the LFO controlled by Rate. Determines the "thickness" of the chorus effect.* |
| **Rate** | *Scales each delay's LFO rate, effectively serving as a master rate.* |
| **Span** | *Scales each delay's pan setting, effectively controlling the image width.* |
| **Glide** | *Controls how quickly delay times arrive at new values when individual delay times are adjusted (either directly or via RSize).* |

# stereoshift+verb8

*(186   Stshift+Reverb8)*

This algorithm is similar to "multishift+verb8," differing in that the shifter is a single voice true stereo unit.
*Stereo in, stereo out*
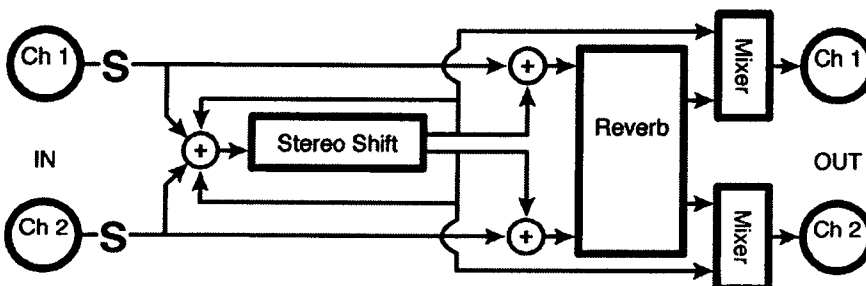


| Pitch | |
|---|---|
| **Send** | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| **S Level** | *Controls the dry pitchshifter output level (but does not affect the pitchshifter level sent to the reverb).* |
| **Mix>Verb** | *Controls the pitchshifter level sent to the reverb (but does not affect the dry pitchshifter output level).* |
| **Pitch** | *Controls the amount of pitchshift effect.* |

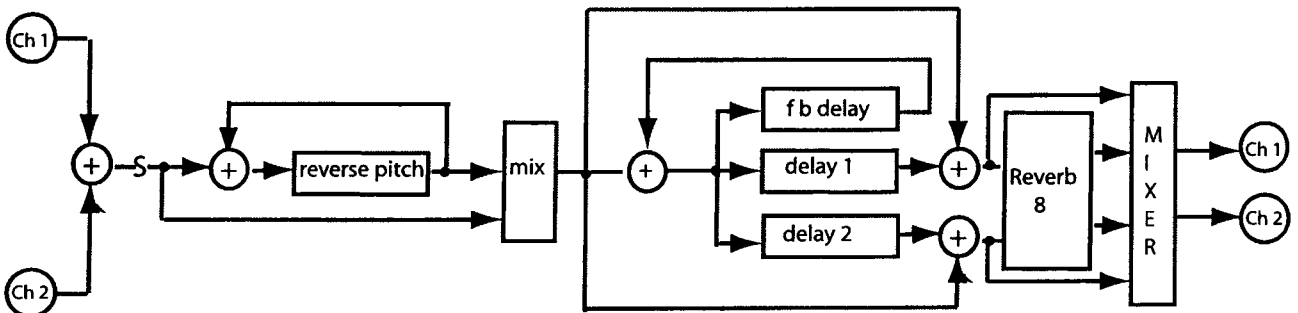| | |
|---|---|
| *Delay* | *Controls the pitchshifter delay time.* |
| *Fback* | *Controls how much of the pitchshifter's output is reapplied to its input.* |
| *LowNote* | *Determines the lowest note the pitchshifter will correctly shift. Set as high as possible for best results.* |
| *XFade* | *Controls the crossfade between old pitchshift values and new pitchshift values.* |

## Verb

| | |
|---|---|
| *R Level* | *Controls the reverb output level.* |
| *RDecay* | *Either reflects the physical reverb decay as entered by T_RDecay (given the current tempo) or allows you to enter the reverb decay in seconds if T_RDecay is set to "Off".* |
| *T_RDecay* | *Controls the reverb decay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic decay generation "off".* |
| *RSize* | *Controls the reverb's room size by scaling the actual delay times.* |
| *PreDly* | *Controls how long the predelay is. Predelay is inserted before the reverb because in a real room, reverb arrives at a listener's ears some time after the dry sound. The larger the room, the longer the lag.* |
| *HiCut* | *Controls the cut of a high-frequency shelving EQ.* |
| *LowCut* | *Controls the cut of a low-frequency shelving EQ.* |
| *HiFreq* | *Controls the frequency at which the high-frequency shelving EQ begins to act.* |
| *LowFreq* | *Controls the frequency at which the low-frequency shelving EQ begins to act.* |
| *Depth* | *Controls how much individual delay times will vary in response to the LFO controlled by Rate. Determines the "thickness" of the chorus effect.* |
| *Rate* | *Scales each delay's LFO rate, effectively serving as a master rate.* |
| *Span* | *Scales each delay's pan setting, effectively controlling the image width.* |
| *Glide* | *Controls how quickly delay times arrive at new values when individual delay times are adjusted (either directly or via RSize).* |

## rev_taps_verb

*(187 R+Dly+Reverb)*

This is a reverseshifter into a three tap delay (left right and feedback) and a reverb 8.
*Summed in, stereo out*



## Reverse

| | |
|---|---|
| *Send* | *Adjusts the level at 'S' in the diagram. If you want to modulate the volume of the effect with MIDI, a volume pedal, or some other external or internal source, this is a fantastic place to do it. You won't get zippering.* |
| *Mix* | *Controls the reverse/dry ratio* |

| | |
|---|---|
| *Pitch* | *Controls the amount of pitchshifting.* |
| *Fback* | *Controls how much of the pitchshifter's output is reapplied to its input.* |
| *T_Length* | *Controls the pitchshifter splice length in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| *Length* | *Controls the shifters splice length in ms values.* |
| *T_Delay* | *Controls the pitchshifter delay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| *Delay* | *Controls the shifters delay in ms values.* |

### Delay

| | |
|---|---|
| *Level* | *Controls the two delays output level.* |
| *T_Delay1* | *Controls delay1 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| *T_Delay2* | *Controls delay2 in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| *T_Fback* | *Controls the fb delay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic delay generation "off".* |
| *Delay1* | *Controls delay1's delay time in ms values.* |
| *Delay2* | *Controls delay1's delay time in ms values.* |
| *Fb Dly* | *Controls the fb delay's delay time in ms values.* |
| *Fback* | *Controls how much of the fb delays output is reapplied to the 3 delays inputs.* |

### Reverb

| | |
|---|---|
| *R Level* | *Controls the reverb output level.* |
| *RDecay* | *Either reflects the physical reverb decay as entered by T_RDecay (given the current tempo) or allows you to enter the reverb decay in seconds if T_RDecay is set to "Off".* |
| *T_RDecay* | *Controls the reverb decay in rhythmic terms (1/4 note, 1/8th note, etc.) or turns rhythmic decay generation "off".* |
| *RSize* | *Controls the reverb's room size by scaling the actual delay times.* |
| *PreDly* | *Controls how long the predelay is. Predelay is inserted before the reverb because in a real room, reverb arrives at a listener's ears some time after the dry sound. The larger the room, the longer the lag.* |
| *HiCut* | *Controls the cut of a high-frequency shelving EQ.* |
| *LowCut* | *Controls the cut of a low-frequency shelving EQ.* |
| *HiFreq* | *Controls the frequency at which the high-frequency shelving EQ begins to act.* |
| *LowFreq* | *Controls the frequency at which the low-frequency shelving EQ begins to act.* |
| *Depth* | *Controls how much individual delay times will vary in response to the LFO controlled by Rate. Determines the "thickness" of the chorus effect.* |
| *Rate* | *Scales each delay's LFO rate, effectively serving as a master rate.* |
| *Span* | *Scales each delay's pan setting, effectively controlling the image width.* |
| *Glide* | *Controls how quickly delay times arrive at new values when individual delay times are adjusted (either directly or via RSize).* |

## utilities

### mute

*(100   Mute_Series, 101 Mute_Xfade)*

This is a 'do-nothing' algorithm with no internal connections. Its purpose is to fill the second engine of a single algorithm parallel preset.
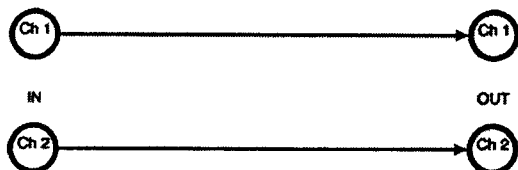*Stereo in, nothing out*

### thru

*(102   Thru_Series, 103 Thru_Xfade)*

As the name suggests, the inputs are passed through to the outputs. This is can be useful for troubleshooting and testing, or to fill the second engine of a single algorithm series preset.
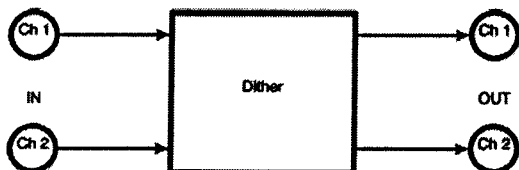*Stereo in, stereo out*

### dither

*(190   Dither)*

A simple dithering algorithm that can be used to reduce the number of output bits to 16, 18 or 20 without adding distortion. The user can choose between rectangular (uniform) or triangular distribution.
*Stereo in, stereo out*

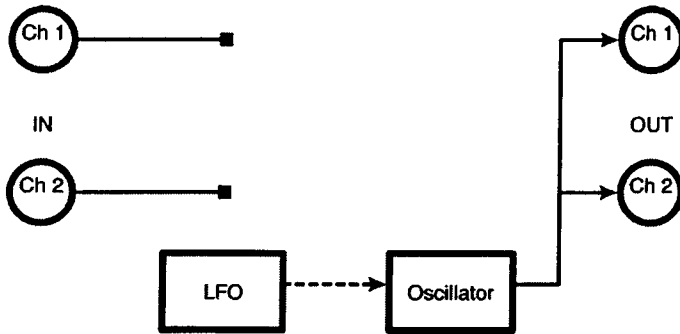| Operate | |
|---|---|
| **Bits** | *Controls the number of output bits. Match this to the bit depth of the device connected to the Eclipse's digital output.* |
| **Type** | *Selects triangle or rectangle dither noise. Stick with triangle unless you know that your audio has already been processed with rectangular dither.* |

## oscillator (440)

*(191  OSC440)*

A general purpose sweepable and modulatable oscillator. The default configuration gives a constant (A)440 Hz tone.

*Nothing in, summed out*



### Osc

| | |
|---|---|
| **Level** | *Controls the oscillator output level.* |
| **Freq** | *Controls the frequency of the oscillator.* |
| **FMod** | *Controls how much the frequency modulator (FM) will affect the oscillator.* |
| **Shape** | *Selects the waveform of the oscillator.* |
| **Duty** | *Controls the "duty cycle" of the oscillator for any Shape other than "sine". For example, if you have selected "triangle" under Shape and set Duty to "0%", the triangle will morph to a sawtooth (very fast rise, slow fall). With Duty at "100%", the triangle will morph to a ramp (slow rise, very fast fall).* |
| **FM Rate** | *Controls the rate of the frequency modulator (set it to some multiple of the oscillator's frequency to create interesting timbres).* |
| **FM Shape** | *Selects the waveform of the frequency modulator.* |
| **FM Duty** | *Controls the frequency modulator's duty cycle.* |

## chromatic tuner

*(192  Tuner)*

This useful chromatic tuner has sharp/flat metering as well as a display of error amount.  It displays pitch (from middle C) and the true frequency. The inputs are passed through unprocessed to the outputs.
*Stereo in, stereo out*
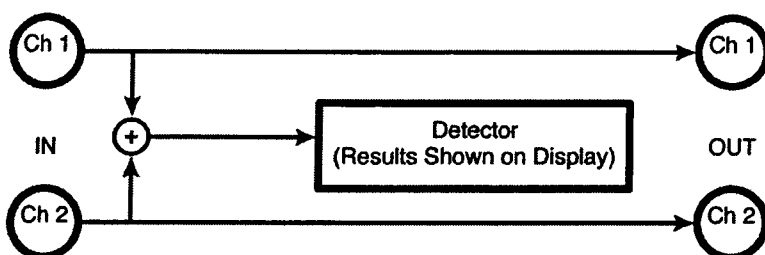


| *Detector* | |
|---|---|
| -\|+ | *Displays how far from in tune the input is.* |
| *Note* | *Displays the closest note to that being supplied at the input.* |
| *OutBy* | *Displays how far from in tune the input is (in cents).* |
| *Pitch* | *Displays how far the input is from middle C.* |
| *Freq* | *Displays the root frequency of the input.* |
| *Cal* | *Calibrates the tuner for music that doesn't conform to A-440.* |

| *Cal^(Calibrates the detector for optimal results)* | |
|---|---|
| *LowNote* | *Determines the lowest note the detector will correctly identify. Set as high as possible for best results.* |
| *HighNote* | *Determines the highest note the detector will correctly identify. Set as low as possible for best results.* |
| *Pitch* | *Displays how far the input is from middle C.* |
| *Freq* | *Displays the root frequency of the input.* |

## TimeFactor™ Algorithms

*These are large and sophisticated algorithms which can have a noticeable loading time. An expression pedal or other modulation source connected to* External 3 *is pre-wired to many of the parameters.*

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**Knobs common to all TimeFactor algorithms**

**Dly Mix**   *(Delay Mix) controls the relative level of the twin delays, Delay A and Delay B. TimeFactor has circuitry that detects which input/output jacks are being used and adjusts the routing of signals through the Effects algorithm accordingly.*

*Dly Mix's mixing behavior depends on whether you're using mono or stereo outputs. You only need to read the section that corresponds to your setup.*

*With Dly Mix set to 0%, BOTH outputs will have only Delay A's contribution. When set to 50%, Delay A goes to Output 1 only and Delay B goes to Output 2 only. When set to 100%, BOTH outputs will have only Delay B's contribution.*

**Dly Time A**

**Dly Time B**   *With Tempo OFF, these controls set delay time for Delay A and Delay B from 0 to 3000 ms (milliseconds). With Tempo ON, delay time can be sync'd to the tempo and is displayed as a rhythmic sub-division of the tempo beat value - changing this from 0 delay to a whole note in common note increments.*

**Fdbk A**

**Fdbk B**   *These controls set Delay A's and Delay B's feedback amount from 0 to 100% which, in turn, controls the number of repeats. Note: For FilterPong, Fdbk B is used to control the diffusion (SLUR) of the repeats.*

**Tempo**   if tempo is ON, delay times are expressed as beats, otherwise they are in mS.

*The action of the following Knobs -* **Xnob, Depth, Speed** *and* **Filter** *- are Algorithm dependent as described below.*

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## TF Digital Delay

*(900   TF 1:1 DigDly)*

Twin 3 second delays with independent delay time and feedback controls.
*Stereo in, stereo out*

**Xnob/Crossfade**   *When delays change, TimeFactor performs a crossfade function to prevent abrupt changes that could result in glitching or clicking. Xnob sets the speed of the crossfade. Small values result in fast crossfades, larger values more gradual crossfades. Xnob sets the crossfade rate (XFADE) from 2 ms to 200 ms.*

**Depth**   *Selects the amount of delay modulation (0=OFF, 10=MAX).*

**Speed**   *Sets the delay modulation rate (0-5Hz).*

**Filter**   *A low pass/high cut filter variable from 0 (no filtering) to 100 (extreme hi cut) to change the tone of your delay repeats.*

## TF Vintage Delay

*(902   TF 2:1 VintDly)*

Simulates the sound of analog and digital delays from days gone by.
*Stereo in, stereo out*

**Xnob/Bits**   *Selects the number of bits of resolution. Early digital delays used analog to digital converters with limited resolution. Theory predicts that each bit equals 6 dB of resolution; so that an 8 bit converter would deliver, at best, a mere 48 dB of dynamic range. VintageDelay simulates the effects of limited resolution - the sound of nasty digital noise from years gone by.*

**Depth**   *Selects the amount of delay modulation (0=OFF, 10=MAX).*

**Speed**   *Sets the delay modulation rate.*

**Filter**   *Controls the filter to simulate the tone of band-limited old school delays.*

## TF Tape Echo

*(907   TF 4:2 TapeEcho)*

Simulates the hiss, wow and flutter of analog tape delay.
*Stereo in, stereo out*

**Xnob/Hiss**   *Simulates analog tape hiss. Ranges from '0' (none) to '10' (max). Tape recorders can be noisy. The dirtier the magnetic heads, the cheaper the electronics, and the crappier (or older) the tape, the hissier the sound.*

**Depth/Wow**   *Simulates analog tape Wow. Wow is a term used to describe relatively slowly changing pitch and amplitude modulations caused by problems with the motor or tape transport that causes the tape's motion across the head to vary. A well maintained tape recorder should have no audible Wow. Ranges from '0' (none) to '10' (max).*

**Speed/Flutter**   *Simulates tape machine Flutter. Like Wow, Flutter is caused when the tape motion across the magnetic heads isn't constant. Flutter is a more rapidly changing variation than Wow. Ranges from 0 (no flutter) to 10 (max flutter).*

**Filter**   *Controls the filter characteristics to simulate tape recorder frequency response. As you increase the filter value, you'll hear a more pronounced tape tone.*

## TF Mod Delay

*(916   TF 9:1 ModDly)*

Modulated delays – great for creating chorus effects and chorused delays.
*Stereo in, stereo out*

**Xnob/Wave Shape**   *Selects the modulation wave shape as displayed by the Billboard display. There are two choices for each wave shape. The single waveforms modulate the two delays in phase and the double waveforms modulate the two delays out of phase.*

**Depth**   *Selects the amount of delay modulation (0=OFF, 10=MAX).*

**Speed**   *Sets the delay modulation rate (0-5Hz).*

**Filter**   *A low pass/high cut filter variable from 0 (no filtering) to 100 (extreme hi cut).*

# TF Ducked Delay

*(906  TF 4:1 DuckDly)*

The delay levels are dynamically lowered while you're playing and restored to their normal levels when you stop playing.
*Stereo in, stereo out*

**Xnob/Ratio**  *Sets the ducking ratio or the degree to which the delay is attenuated.*

**Depth/Threshold**  *Sets the ducking threshold - the audio amplitude - at which ducking kicks in (-36 dB to -66 dB).*

**Speed/ReleaseTime**  *Sets the release time from 500 to 10 msec. With the release time set to short values, the delay will kick in quickly when you stop playing. With the release time set to longer values, the delay will stay ducked for a while. Longer release times are useful when you're playing a riff and don't want the delay to kick in between notes.*

**Filter**  *A low pass/high cut filter variable from 0 (no filtering) to 100 (extreme hi cut).*


# TF Band Delay

*(904  TF 3:1 BandDly )*

Delays are followed by user selectable modulated filters.
*Stereo in, stereo out*

**Xnob/Resonance** *Sets the resonance ("RES") or sharpness of the filter. RES varies from 0 (subtle effects) to 10 (dramatic resonance effects).*

**Depth**  *Sets the amount that the filter cut-off or center frequencies are modulated/shifted.*

**Speed**  *Sets the rate of modulation for the filter center frequencies (0-5Hz).*

**Filter**  *Select filter type – Low Pass, Band Pass or Hi Pass*


# TF Filter Pong

*(910  TF 6:1 FiltPong)*

The dual delays ping pong between the outputs with filter effects added for good measure.
*Stereo in, stereo out*

**Xnob/Wave Shape** *Selects the 'shape' of the filter modulation as displayed by the Billboard.*

**Depth**  *Sets the filters' amount of frequency modulation.*

**Speed**  *Speed multiplier for filter modulation.*

**Filter**  *Controls the mix between the dry and filtered signal input to the ping-pong delay.*

**Fdbk B**  *The FilterPong Effect is created by cross connecting the feedback paths of the twin delays. As a result, only a single feedback control is needed - Fdbk A. Fdbk B is used to control the diffusion (SLUR) of the repeats. With low diffusion the repeats are discrete. Increasing diffusion slurs the repeats.*

## TF Multitap Delay

*(901   TF 1:2 Multitap)*

10 delay taps with controls for delay time, diffusion, tap levels and tap spacing.
Note that it is not possible to re-create the factory presets using this algorithm – better to tweak the existing ones.
*Mono in, mono out*

**Xnob/Slur**   *Selects the amount of diffusion (SLUR) from '0' (none) to '10' (max).*

**Depth/Delay Tap Taper**   *Sets the relative level (taper) of the taps. With TAPR = -10, the $I^{st}$ tap is the quietest and the last tap loudest. With TAPR = 0, all taps are equally loud. With TAPR = 10, the $I^{st}$ tap is loudest and the last tap quietest.*

**Speed/Delay Tap Spacing** *Sets the spacing between taps from 0 (spacing increases with increasing delay) to 5 (taps are equally spaced) to 10 (spacing between taps decreases with increasing delay).*

**Filter**   *A tone control filter that reduces high frequencies to darken the ambient sounds that you create.*

## TF Reverse Delay

*(905   TF 3:2 Reverse)*

Reverse audio effects.
*Stereo in, stereo out*

**Xnob/Crossfade**   *In Reverse, the audio segments are read backwards and must be spliced. TimeFactor performs a crossfade at the splice point to prevent abrupt changes that could result in glitching or clicking. Xnob sets the rate of the crossfade. Small values result in fast crossfades and a more audible rhythm for the reverse effect, larger values more gradual crossfades and a smoother reverse sound. Xnob sets the crossfade rate (XFADE) from 2 ms to 200 ms.*

**Depth**   *Selects the amount of modulation (0=OFF, 10=MAX).*

**Speed**   *Sets the delay modulation rate (0-5Hz).*

**Filter**   *A low pass/high cut filter variable from 0 (no filtering) to 100 (extreme hi cut).*

## TF Looper

*(920   TF Looper)*

48 second Looper with Dubbing and speed control.
*Mono in, mono out*

The Looper can be in one of the following states: Empty, Recording, Playing, Dubbing, Stopped.

### Empty

*When the Looper is first loaded, the loop is Empty, the display shows [EMPTY] and the **Record** knob may be used to start Recording. If autoplay mode is selected [AP:LOOP], loop playback will start when recording reaches the loop end.*

### Recording

*While recording, the display shows running record time [R>00.00] or beat count [R>(beats)]. During recording some knobs have new functions:*

**Record**   *Press to create Loop End and start Dubbing. The Dub Mode setting determines if the new audio is added to or replaces the previously recorded audio.*

**Play**   *Press to create Loop End and start Playing from Loop Start. The Play Mode setting determines if the Loop is played once or continuously.*

**Stop**   *End recording and stop.*

## Dubbing

*If Record is pressed while recording, Dubbing begins and the display shows running time [D>00.00] or beat count [D>(beats)]. While Dubbing, some knobs have new functions:*

**Record**     Stop/Start Dubbing while Playing continues. The Dub Mode setting determines how the Loop is overdubbed.

**Play**     End Dubbing and Start Playing from Loop Start. The Play Mode setting determines if the Loop is played once or continuously.

**Stop**     End Dubbing and Stop Playing.

## Playing

*If Play is pressed while Stopped, Playing begins and the display shows running play time [P>00.00] or beat count [P>(beats)]. During playback some knobs have new functions:*

**Record**     Start Dubbing at the current Loop time. The Dub Mode setting determines if the new audio is added to or replaces the previously recorded audio.

**Play**     Start Playing from Loop Start. The Play Mode setting determines if the Loop is played once or continuously.

**Stop**     Stop Playing.

## Stopped

*If Stop is pressed while Playing, Recording or Dubbing, the Loop stops, the display shows [STOPPED] and the knobs have the following functions:*

**Record**     Clear Loop and begin recording. If autoplay mode is selected, [AP:LOOP], loop playback will start when recording reaches the loop end.

**Play**     Start Playing from Loop Start. The Play Mode setting determines if the Loop is played once or continuously.

**Stop**     No action.

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### Looper Control Knobs

**Begin**     Sets the Loop Start Point from 0 ms to Loop Length. The Loop Start Point is automatically set to 0 at the beginning of a new loop. When the Loop is Empty, this parameter is disabled.

**Length**     When the Loop is Empty, sets the Loop Length. Note that audio recording quality is degraded at slower recording speeds (1/2X and 1/4X). The maximum loop length is determined by the setting of the *Speed* parameter as follows:

| Speed | 2X | 1X | 1/2X | 1/4X |
|---|---|---|---|---|
| Max Loop Length | 20 sec | 40 sec | 80 sec | 160 sec |

When a Loop is in memory, *Length* sets the Loop Length that is played starting with the **Begin** Point. In other words, if a 12 second Loop is recorded and **Begin** is set to 2 seconds and **Length** is set to 4 seconds, the recorded Loop will play from 2 seconds to 6 seconds into the 12 second Loop.

*Length* is automatically set to Loop Length at the beginning of new loop.

**Decay**     When dubbing you may want the original saved audio to persist as you add new sounds. Of course, indefinitely adding new signals will eventually result in 'mud' (the "Crayola" effect). The Decay control allows the saved audio to fade as you dub new material. The Decay Rate is adjustable from 0% [DCY: 0] to 100% [DCY:100]. When set to 0%, the loop never decays. When set to 100% the previously saved audio decays completely each time through the loop when dubbing. In other words, the looped audio is only played once. This control has no affect on normal Playback, only on dubbing.

**DubMode**     There are four choices that determine the type of dubbing (Add or Replace) and the action of the Footswitch control (Latch or Punch).

To Dub, press the **Record** knob while the loop is playing or recording. The action of the **Record** knob when dubbing depends on the setting of the **DubMode** control.

*If you want to simply press and release the switch to Dub, set this control to one of the two Latching modes. Dubbing will continue until you press **Stop** (or press record again to turn dubbing off).*

*On the other hand, you may prefer to Dub only while you're pressing and holding the **Record** knob. To do this, choose one of the two Punch modes.*

*The Dubbing Mode choices are:*

*[D::LATCH] – **Record** toggles Dubbing ON/OFF. Dubbed audio is added to the looped audio.*

*[D::PUNCH] – **Record** enables Dubbing while the footswitch is held. Dubbed audio is added to the looped audio.*

*[D::REPL-L] – **Record** toggles Dubbing ON/OFF. Dubbed audio replaces looped audio.*

*[D::REPL-P] – **Record** enables Dubbing while the footswitch is held. Dubbed audio replaces looped audio.*

**PlyMode**   *This knob is used to select the Playback Mode:*

*[P::ONCE] – **Play** initiates playing the loop one time from the loop's start point.*

*[P::LOOP] – **Play** initiates playing the loop continuously from the loop's start point.*

*[AP::LOOP] – When recording ends, loop begins playing automatically and plays continuously.*

**SpdQuan**   *This control selects Play Speed resolution. When set to [SMOOTH], resolution is 1%. The other Depth control settings allow you to select the Play Speed in musical intervals as follows:*

*[OCTAVES] – From two octaves down to one octave up - 25%, 50%, 100%, 200%*

*[OCT+5TH] – Octaves and fifths - 25%, 37%, 50%, 75%, 100%, 150%, 200%*

*[DOM7TH] – Dominant 7th Chord (root, M3rd, 5th, m7th, representing common key modulations) - 25%, 32%, 37%, 45%, 50%, 63%, 75%, 89%, 100%, 126%, 150%, 178%, 200%*

*[CHROMATIC] – Semi tones - 25%, 26%, 28%, 30%, 32%, 33%, 35%,37%,40%, 42%, 45%, 47%, 50%, 53%, 56%, 59%, 63%, 67%, 71%, 75%, 79%, 84%, 89%, 94%, 100%, 106%, 112%, 119%, 126%, 133%, 140%, 150%, 159%, 168%, 178%, 189%, 200%*

**Speed**   *When the Loop is Empty, the Speed control lets you select the record speed. The choices are:*

*[SPD:2X] – Double speed. At this record speed, the maximum loop length is 20 seconds.*

*[SPD:1X] – Normal speed. At this record speed, the maximum loop length is 40 seconds.*

*[SPD:1/2] – Half speed. At this record speed, the maximum loop length is 80 seconds.*

*[SPD:1/4] – Quarter speed. At this record speed, the maximum loop length is 160 seconds.*

*After a loop is recorded, **Speed** controls the speed of Loop playback over a three octave range from two octaves down (25%) to one octave up (200%). **Speed** resolution is dependent on the setting of the Depth control.*

**Filter**   *Controls the tone of the looped audio. Tone control filters are placed at both the input and output of the Looper. This allows you to control the tone of the audio that you're recording and then independently control the tone on playback. Turning to the left cuts low frequencies and turning to the right cuts high frequencies. For flat response, set the knob to 12 o'clock.*

## ModFactor™ Algorithms

*These are large and sophisticated algorithms which can have a noticeable loading time. An expression pedal or other modulation source connected as* External 3 *is pre-wired to many of the parameters. In some cases, where an expression pedal is specified as a direct modulation input, it may be connected as* External 4.

ModFactor uses 2 LFOs (Low Frequency Oscillators) to create classic or FM/AM modulated versions of many popular modulation effects. The primary LFO drives the main effect and is controlled by three controls, *Depth*, *Speed* and *Shape*.

These knobs control the primary parameters of the effects. Two other knobs control important aspects of the effects. *Intensity*, ranges from subtle to dramatic. *Type* selects the type of effect – i.e. the "type" of Flanger, "type" of Phaser, etc.

Other knobs (*S-Mod, D-Mod, ModRate* and *ModSource*) control the secondary LFO which in turn modulates the Speed and Depth of the primary LFO. The *S-Mod* knob controls the amount of Frequency Modulation applied to the primary LFO and the *D-Mod* knob controls the amount of Amplitude Modulation.

With **S-Mod/D-Mod** knobs set fully counterclockwise, the secondary modulation is disabled and ModFactor creates high quality renditions of classic modulation effects. As the **S-Mod/DMod** knobs are turned up a small amount of movement will be added to the effect to give it a controlled organic feel. Increase the amount of S-Mod/D-Mod for complex and interesting and even extreme modulation effects.

The availability of expression pedal and envelope mod shapes allows the modulation rate to be controlled dynamically by your playing as well.

Because *Intensity* controls the wet/dry mix as well as its other functions, these algorithms will usually be used with the main wet/dry control set to 100% wet.

| | |
|---|---|
| *Intensity* | *Controls the intensity of the effect from 0 to 99%. For TremoloPan type Bias, Intensity controls the amount of Drive. For high input levels, setting Drive to high levels can cause overload distortion. For TremoloPan type Opto, Intensity controls input slew rate (Edge) and, depending on the input signal, may only have a subtle effect.* |
| *Type* | *Selects the type of effect. For example, ModFactor has 4 distinct types of Phasers – Negative, Positive, Feedback and Biphase.* |

| EFFECT | TYPE | | | |
|---|---|---|---|---|
| CHORUS | LIQUID | ORGANIC | SHIMMER | |
| PHASER | NEGATIVE | POSITIVE | FEEDBACK | BIPHASE |
| Q-WAH | WAH-WAH | V-WAH | | |
| FLANGER | POSITIVE | NEGATIVE | JET | THRU-ZERO |
| MODFILTER | LOPASS | BANDPASS | HIPASS | |
| ROTARY | STANDARD | GIANT | | |
| TREMOLOPAN | BIAS | OPTO | | |
| VIBRATO | MODERN | VINTAGE | RETRO | |
| UNDULATOR | PITCH | FEEDBCK | | |
| RINGMOD | DC | AC | | |

| | |
|---|---|
| *Depth* | *Sets the modulation sweep range from narrow to wide.* |
| *Speed* | *Sets the modulation sweep rate. If Envelope or ADSR is selected for the Shape parameter, the modulation is driven by the amplitude of the audio input and the Speed control becomes a Sensitivity control. If Slow Mode is enabled, an "S" prefix is added to the Speed Parameter value.* |

| | |
|---|---|
| *Shape* | Selects the shape (or source) of the modulation. The choices are: SINE, TRIANGL(E), PEAK, RANDOM, SQUARE, RAMP, SQUARE, SMP/HLD, ENVELOP or ADSR. In addition, an Expression Pedal (EXP PDL) can be chosen as a source, using External 4. |
| *Xnob* | The Xnob control is effect type dependent and works as follows: |

| EFFECT - TYPE | XNOB Function |
|---|---|
| CHORUS – LIQUID | Feedback |
| CHORUS – ORGANIC | Manual Delay Offset [MDO] |
| CHORUS – SHIMMER | Feedback |
| PHASER – NEGATIVE/POSITIVE/FEEDBACK | Filter Stages |
| PHASER – BIPHASE | Forward/Reverse |
| Q-WAH | Base Frequency |
| FLANGER | Manual Delay Offset [MDO] |
| MODFILTER | Width |
| ROTARY | Tone |
| TREMELOPAN | Width |
| VIBRATO – MODERN/VINTAGE | Width |
| VIBRATO – RETRO | Filter Stages |
| UNDULATOR – PITCH | Spread |
| UNDULATOR – FEEDBCK | Feedback |
| RINGMOD | Tone |

### Modulating the Modulation

| | |
|---|---|
| **D-Mod** | Controls the amount of modulation of the Depth parameter. Analogous to AM (Amplitude Modulation). Full counter-clockwise is OFF. |
| **S-Mod** | Controls the amount of modulation of the Speed parameter. Analogous to FM (Frequency Modulation). Full counter-clockwise is OFF. |
| **Mod Rate** | Sets the secondary LFO rate – determines how fast the D-Mod and S-Mod "wiggle" their targets. Ranges from 1/8 to 8X the Speed value. If Envelope or ADSR is selected as the Mod Source, the modulation is driven by the amplitude of the audio input and the S-Mod control becomes a Sensitivity control. |
| **Mod Source** | Selects the secondary LFO modulation source. The choices are: SINE, TRIANGL(E), PEAK, RANDOM, RAMP, SQUARE, SMP/HLD, ENVELOP or ADSR. In addition, the Expression Pedal (EXP PDL) can be chosen as a source, using External 4. |

### Modulating the Modulation of the Modulation

*Just kidding ....*

## MF Chorus

*(921   MF 1:1 Chorus)*

Chorus is an effect that is designed to take a single voiced instrument and give it the sound of many instruments playing together. This is achieved through randomly modulating several delay lines to create pitch and timing imperfections and then panning these voices in the stereo field.

*Stereo in, stereo out*

## MF Phaser

*(923  MF 2:1 Phaser)*

Phasing is an effect created by a series of digital filters. When the output of the filters is mixed with the dry signal sharp notches are created in the frequency spectrum of the output; by modulating the center frequencies of the filters the notches move giving a sense of motion to the effect.

*Stereo in, stereo out*

## MF qWah

*(925  MF 3:1 Q-Wah)*

The Q-Wah effect simulates a classic wah wah pedal when **Shape** is set to pedal or an auto wah when set to envelope. Using **Depth** and/or other wave shapes creates more complex wah sounds. **Intensity** will increase the Q or "Slinky-ness" of the wah effect.

*Stereo in, stereo out*

## MF Flanger

*(927  MF 4:1 Flanger)*

Flanger is similar to Phaser, however the use of delay lines in place of filters creates notches that are harmonically related to each other.

*Stereo in, stereo out*

## MF Mod Filter

*(929  MF 5:1 ModFilter)*

ModFilter is a set of modulated filters. **Intensity** controls a combination of base filter frequency and Q, while **Depth** controls the frequency offset of the left and right channels to create a stereo image.

*Stereo in, stereo out*

## MF Rotary

*(931  MF 6:1 Rotary)*

Simulates the sound of a rotating speaker for that popular Leslie effect. ModFactor offers two types of rotary simulations – a standard-sized and an over-sized ("giant") cabinet.

*Stereo in, stereo out*

## MF Tremolo Pan

*(933   MF 7:1 TremoloPan)*

Tremolo is an effect that is created by modulating the level of the incoming audio with an LFO. With this effect, as you turn **Xnob**, it will shift the phase of the right channel's LFO creating a tremolo that will move from left to right in the stereo field. When the **Xnob** is full clockwise, the right channel will be 180 degrees out of phase with the left creating an autopanner. Both outputs will have to be connected for this to function correctly.

*Stereo in, stereo out*

## MF Vibrato

*(935   MF 8:1 Vibrato)*

Vibrato is an effect that simulates the pitch change you get by modulating a guitar string or using a whammy bar. Modulating the rate with an Expression Pedal or envelope will create some insane vibratos.

*Stereo in, stereo out*

## MF Undulator

*(937   MF 9:1 Undulator)*

Undulator is a classic Eventide effect that combines two delays, two detuned voices, and a FM modulated tremolo. By turning up the **Intensity** you can increase the dry/effect ratio.

*Stereo in, stereo out*

## MF Ring Modulator

*(939   MF 10:1 RingMod)*

Ring Modulation is an effect created by multiplying an input signal by another waveform - the result is a waveform containing the sums and differences of the initial frequencies and their partials. This creates a waveform with complex (and possibly inharmonic) bell-like overtones.

By using the **S-Mod** control to modulate this carrier frequency you can create useful and interesting sounds. By engaging the **Sync to Tempo/Pitch** feature, the LFO rate control displays note values instead of Hz, by selecting the tonic of your scale or something similar you can ensure that the output of this process will be harmonically related to the notes you play. The **Depth** parameter slightly detunes the right and left voices creating a stereo field.

Note that the **Mod Rate** knob controls Sensitivity for this effect.

*Stereo in, stereo out*