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Eventide MKII Instant Phaser User Guide

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Welcome

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About This Product

Eventide is proud to introduce to you the Instant Phaser Mk II plug-in. This updated version of the Instant Phaser plug-in is a more faithful recreation of the original Eventide Clockworks Instant Phaser both in appearance and

sound. The original Eventide Clockworks Instant Phaser was among the world's first commercially available professional recording products. For over 40 years, innovative products like these have made Eventide an industry leader, and we are proud that they continue to be in demand today.

Thank you for your purchase and, before you forget, please take a few minutes to register online. This helps us keep you informed of any important software updates, and any special offers that may only be available to registered users.

Instant Phaser Mk II

The Instant Phaser

Originally released in 1971, the Eventide Clockworks Instant Phaser was designed to replace the tedious and costly effort required to set up tape flanging. Because, at the time, the cost of the electronic components required to produce a delay of the necessary length was prohibitively expensive, the Instant Phaser uses a series of electronic phase shift networks. The phase shift produced by these phase shift networks was electronically controllable, allowing the user to sweep the nulls produced in the frequency spectrum in a manner similar to the effect of varying a time delay. Although the effect of varying these phase shift networks approached that of tape flanging, it wasn't quite the same. This technique is now recognized by musicians everywhere as Phasing.

Phasing

The basis of phasing, both electronically and digitally, is a filter known as the all-pass filter. As one might assume, this filter is so named because it passes signals of all frequencies, but its output phase varies as a function of frequency. For a single all-pass section, the maximum phase variation is 180 degrees. By adding the input of the filter to the output of the filter in a 1:1 ratio, the added signals will be reinforced at frequencies where the phase shift is near zero and cancelled where the phase shift is near 180 degrees.

To produce the desired notches in the output spectrum, several such all pass filters are connected in series. For any such phase shift network there will be half as many notches in the output spectrum as there are all-pass filters. The Eventide Clockworks Instant Phaser has 8 all-pass filters arranged in pairs, resulting in 4 notches in the output spectrum.

Not Just Another Phaser

The Eventide Clockworks Instant Phaser, and therefore the plug-in, had some features that make it unique when compared to other phasers. In addition, we have added some parameters that may not be as common in other plug-ins. These will be described in detail below, with a full control description in the following section.

Depth Is Mix!

Many modulation type effects provide a mix control. In fact, it is impossible to achieve most modulation-type effects without a mix control. By definition these effects are created by combining the dry input signal with some affected signal. This signal is usually phase shifted by means of a phase shift network, or time delayed by a digital delay line or bucket brigade device. The Instant Phaser has a mix knob, but rather than being labeled Mix, it is called Depth. At 0% the output is entirely the phase shifted signal, so you will hear a slight detuning effect. At 100% it is an even mix of the dry and wet signal for full phasing effect.

Why is it called Depth, you ask? As you add more of the dry signal to the delayed signal nulls appear in the output spectrum. These nulls get deeper as the two signals approach equal amplitude. Hence you are controlling the depth of the nulls!

Stereorizer

The Eventide Clockworks Instant Phaser had two outputs, a Main out and an Aux out.
These outputs differ from each other in that one receives an extra two phase shift sections compared to the other. As a result, the Aux output has one less notch in its output spectrum, and can be considered out of phase with the Main output. If the two outputs are configured such that the Main out is sent to the left channel and Aux out is sent to the right, you will hear a stereo effect. This can sound like the output signal is moving in the stereo field, or that it is becoming wider or narrower. Which output path is used by the plug-in can be configured with the Mode setting.

Mod Sources

Unlike most phasers, which are solely controlled by an LFO, the Instant Phaser gives you access to four different modulation sources. They are:

- Manual – The big knob in the center, used for manual control of the phasing/
- Oscillator – The classic LFO-controlled phasing, with variable rate.
- Envelope – Phasing is controlled by the level of the input signal, with adjustable threshold and release time.
  The switch below the Envelope controls allows for a side chain input to be routed to the envelope follower
  instead of the input signal.
- Remote – On the original box, this was a 1/4 inch jack for any remote signal. In the plug-in this makes the
  phasing controllable via MIDI.

Age

Things age, there's nothing we can do about time, and electrical components are no different. While modeling the Instant Phaser we discovered certain side effects from the aged components that, while not intended in the initial design, contribute to the sound of our current box. Of course, the logical thing to do with this information is take it to the extreme. What would happen if this thing aged another hundred years? Thus, the Age knob was born. At 0% this corresponds to a box that is fresh out of the factory in 1972. At 25% this matches our current box exactly. At 100%, well… they say things get better with age, but only to a certain extent. With the age knob you are literally controlling the age of the electrical components that make up the Instant Phaser.

Control Overview

Operating the plug-in is simple and intuitive: knobs are controlled by clicking and dragging up or down, and switches/buttons can be clicked to toggle their state. You can hold down the Command (macOS) or Control (Windows) key prior to click dragging the knob to have the knob move more slowly, giving you a finer degree of control over the parameter. The parameter value for the control is displayed over the knob and is updated in real time. Option (macOS)/Alt (Windows) clicking or double-clicking a parameter will return it to its default setting.

The controls are divided into three main sections: Main Panel, Expansion Panel and the Preset Bar.

Main Panel

- **In/Out**

  Bypasses the plug-in. Out for bypass, In for wet output.

- **Depth**

  Controls the mix of wet and dry signals. At 0% the output is solely the phase shifted signal. At 100% the output is the addition of the phase shifted signal and the input. This will cause a gain of 6dB at certain frequencies depending on the phase shift.

- **Remote**

  Enables MIDI CC1 (Mod Wheel) control of the phase shift. Note that this must be set to 'On' AND the Mod Source must be set to 'Remote'.

- **Oscillator**

  Controls the rate of the LFO. Ranges from 0.01Hz to 20Hz when un-synced, 16 bars to 1 64 th note when synced.

- **Manual Knob**

  Provides manual control of phasing. 0% moves the nulls in the frequency response to their highest position in frequency, 100% moves them to their lowest position in frequency.

- **Threshold**

  Controls the threshold of the envelope follower. This is variable from -30dB to -0dB. An input signal at this level will result in the biggest change in phase shift when using the envelope follower phase shift control.

- **Release**

  Sets the release time of the envelope follower. Release times can vary from 10 milliseconds to 10 seconds.

- **Mod Source**

  The Mod Source knob sets which control signal is used to vary the phase shifting. This can be one of: Manual, Oscillator, Remote (MIDI), or Envelope Follower.

Expansion Panel

- **Input**

  Sets the input gain of the plug-in. Can vary from -60dB to +12dB.

- **Sync**

  Tempo syncs the LFO to the tempo of the current session. The oscillator rate is then set in metrical subdivisions ranging from 16 bars to 1 64 th note.

- **Retrig**

  Re-triggers the LFO such that it jumps to its starting value. Normally, the Phaser's LFO is free-running, so this can be a useful tool to ensure that the LFO is the same between playbacks.

- **Age**

  Controls the age of the electrical components that make up the Instant Phaser. 0% is a factory fresh unit from 1971, 25% is the box we modeled as it is now, 100% is a very ungracefully aged Instant Phaser.

- **Feedback**

Controls the feedback of the phase shift sections. 0% sends none of the output back to the input to the phase shift sections and 100% sends the maximum amount of output back to the input of the phase shift sections.

- **Side Chain**

  When enabled, this changes the input to the envelope follower from the input of the plug-in to a side chain input, enabling control of the phase shifting from an external track.

- **Output**

  Sets the output gain of the plug-in. Can vary from -60dB to +12dB.

Preset Bar

Located at the top of the Instant Phaser Mk II Plug-In, the Preset Bar lets you load and save presets, along with several other features.

When Instant Phaser Mk II is installed, a library of settings is placed into the /Music/Eventide/Instant Phaser Mk II/Presets folder (Mac) or the /Documents/Eventide/Instant Phaser Mk II/Presets folder (Windows). These presets have a .tide extension and can be saved or loaded from the Instant Phaser Mk II preset bar in any supported DAW.

In many DAWs there is an additional generic preset bar that saves DAW-specific presets to a separate location. We recommend saving your presets using the Eventide preset bar to ensure that your presets will be accessible from any DAW. You can also create sub-folders inside the preset folders, if you wish.

- **Load/Save**

  Use these buttons to load and save your presets in .tide format.

- **Compare**

  Click to toggle between two different settings for the plug-in.

  This is useful for making A/B comparisons.

- **Info**

  Click this button to open this manual.

- **Settings**

  Click this button to edit user interface settings for all instances

  of the plugin.

- **Mode**

  As mentioned in section 2.3, the Eventide Clockworks Instant

  Phaser had two unique outputs called Main and Aux. The Mode control gives you access to which of these

  outputs is used by the plug-in, and can drastically change the sound.

  For the stereo output versions of the plug-in the options are Shallow, Deep, and Wide. For the mono output

  version of the plug-in the options will only be Shallow or Deep. Shallow means that all plug-in outputs will

  correspond to the Aux output of the hardware unit, which had 6 phase shift sections. Deep means that all plug-

  in outputs will correspond to the Main output of the hardware unit, which had 8 phase shift sections for a

  deeper phasing effect.

  The Wide mode corresponds to routing the Main output to the left channel and the Aux output to the right

  channel. Because of the different number of phase shift sections in each channel there will be a noticeable

stereorizing or widening effect when using the Wide mode.

Conclusion

We hope you enjoy the Instant Phaser Mk II plug-in and put it to good use in all of your mixes. Please be sure to check over Eventide's other Native Plug-In offerings for more unique and interesting effects.

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Documents / Resources

INSTANT PHASER MK II User Guide Eventide	**Eventide MKII Instant Phaser** [pdf] User Guide MKII Instant Phaser, MKII, Instant Phaser

References

- **E Eventide Audio & Communications**
- **E Eventide Audio | Studio Processors, Effects Pedals and Plug-ins**

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