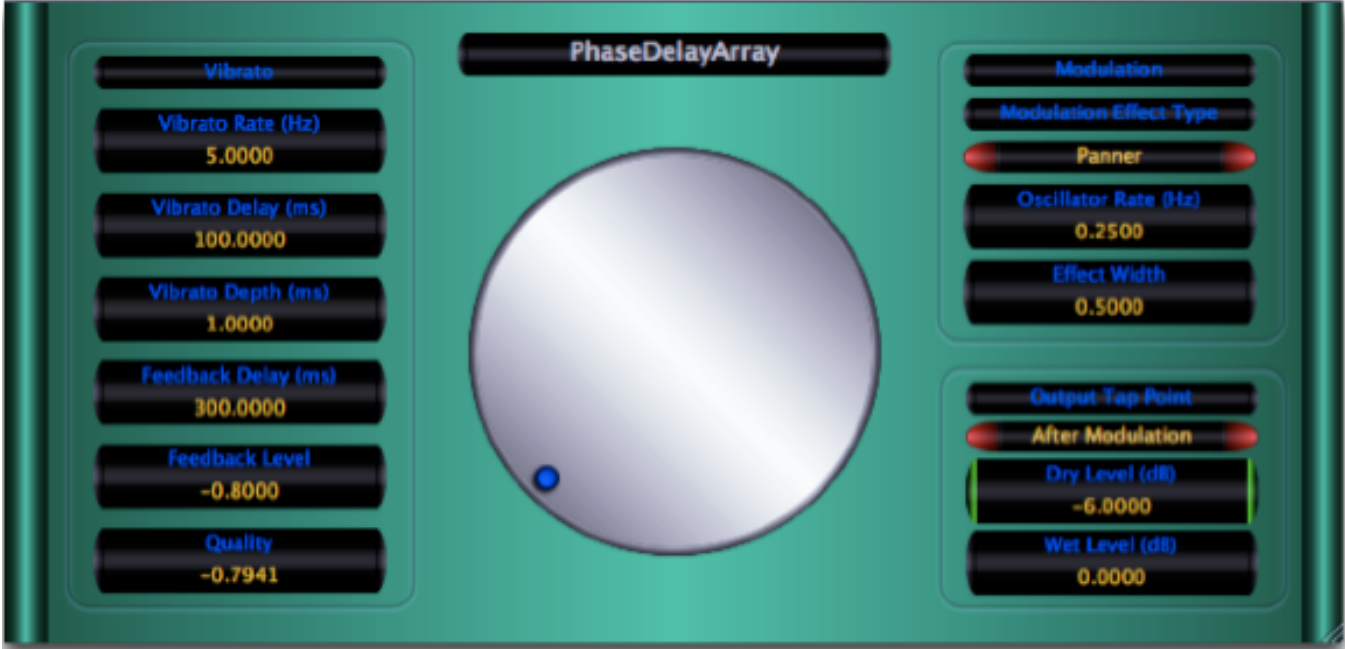


Music Unfolding PhaseDelayArray Audio Unit User Guide



Requirements:

OS X 10.4 or higher is required. PhaseDelayArray requires an Audio Unit (AU) capable host. A host that supports Cocoa user interfaces (UI) for AU's is preferred. Please check PhaseDelayArray's operation in your host of choice for suitability before purchasing.

Installation:

PhaseDelayArray can be installed in any of the standard Audio Unit component locations. These are commonly /Library/Audio/Plug-Ins/Components and ~/Library/Audio/Plug-Ins/Components (where "~" stands for the user's home directory). Drag PhaseDelayArray.component into the Components directory and relaunch your AU host software. The included presets also need to be installed into one of the standard locations (/Library/Audio/Presets/MusicUnfolding/PhaseDelayArray and ~/Library/Audio/Presets/MusicUnfolding/PhaseDelayArray). If you already have a MusicUnfolding directory in your "Presets" directory, then drag the PhaseDelayArray directory into this location. If not, drag the MusicUnfolding directory that contains the PhaseDelayArray presets directory into the "Presets" directory.

To register PhaseDelayArray, go to the Music Unfolding online store. After you have made the payment for PhaseDelayArray, a registration number will be sent to you by email. This usually only takes a few minutes. Once you receive the registration number, copy the entire license string. It will be of the form "MU-PDA-XXXXXXXXXXXX-YYMMDD".

Bring up PhaseDelayArray in your Cocoa-capable host. Clicking on the PhaseDelayArray badge/logo brings up the registration panel. Make sure the text box is active and then press the paste button. If the string has gone into the text box correctly, click the "Enter License" button." If the license is accepted as valid, the message will change to indicate that you are registered. If the string is rejected, please ensure that you've copied the entire string and that it doesn't include any leading spaces. Once the registration number is accepted, you need to get your host to reload the AU. In GarageBand, you can do this by setting the plugin slot that PhaseDelayArray is in to "None" and then reselecting PhaseDelayArray. The intermittent audio static from the demo version will now be gone. In some hosts it may be necessary to quit from the host and relaunch, to pick up the registration in the audio portion of the AU.

Introduction:

First, we'll start with a quick introduction to the editing controls for PhaseDelayArray. All controls are set using the same knob. Click the desired control readout to select and then move the knob to control. The active (selected) control is indicated by the green end caps. The knob works on a circular motion. The closer to the center you are dragging the knob, the rougher the increments. Moving farther out makes the increments finer. You can even click the surface of the knob and drag out of the surface of the knob and then move in a circular motion if you want finer control. To set a parameter to an exact value, double click the parameter readout. This brings up a text box where the parameter value can be set exactly.

Double-clicking the knob sets the selected parameter to its default value. The knob will act with a linear, logarithmic or power response depending on the parameter that is selected. One of the common features of the Twister Series of AU's is that many of the parameters have a very large effective range. PhaseDelayArray shares this feature in its various depth and delay parameters. Useful ranges for these parameters can be from around 0.01 ms to 5000.0 ms. In addition, fine control is needed across the entire range. This common characteristic motivated the development of the single knob UI.

The controls also support click-and-drag directly on the surface of the readout. Clicking-and-dragging in a vertical direction changes the parameter values. Dragging in a horizontal manner causes the value to change ten times slower. The control behavior (linear, log or power) is the same as it is while using the knob for parameter control. In addition, hovering the mouse over the control and using the scroll wheel also changes the control value. If you have a mouse with a horizontal scroll wheel motion, scrolling horizontally changes the parameter value with 10 times finer control.

The colors of the parameter displays can be changed in the preferences/registration panel. To bring up the panel, click on the name tag/badge for the AU. Select the colors of your choice and then to see the new colors in effect, you must close and reopen the AU. The preference is applied in all hosts for a given user. Note that these color preferences apply to all of the Twister series AUs. Setting your color preference in one will apply this preference to all of the Twister AUs.

O.K. Let's get this question out of the way first. "What is it?" PhaseDelayArray has three effect units chained together in an interesting configuration. And one of these units is just a little bit twisted. The first unit consists of a sequential array of vibrating (oscillating) reverberation sections. The oscillations can be tiny or huge. The reverb depth can be tiny or huge. The overall effect can be subtle or HUGE. And, it can create a pretty big range of sounds. The second section is a modulation section. It takes the output of the PhaseDelays and whips it around, or up-and-down or back-and-forth. The final section is a feedback unit with the possibility of a lot of delay (up to 5 seconds). The mix section allows you to tap into all this strangeness in four different places.

The Sections:

Vibrato: Well, it does vibrate. The "Vibrato Rate" sets the speed of the "Vibrato Depth" oscillation through the gang of phase delay units. The "Vibrato Delay" sets the reverberation delay time in the phase delay units. The "Vibrato Depth" is the depth (in time) of the delay oscillation. The "Quality" parameter sets the phasiness or swooshiness or maybe we should call it the quality of the sound coming out of the phase delays. It has a range from negative one to positive one. The "Feedback Delay" is the delay time of the feedback signal. The feedback signal is post the modulation unit. This allows for some interesting effects. The "Feedback Level" has a range of negative to positive one. To stop the feedback, set the value to zero. Negative values are particularly good for causing phase-like effects.

Modulation: Modulation is post the phase delay units and before the feedback unit. Several of the modulation effects only work when operating in stereo. When in mono use, choosing one of these will effectively set the modulation type to "None." The "Oscillator Rate" sets the speed of the LFO for the modulation effect. The "Effect Width" parameter takes values from zero to one. A value of zero causes the effect to do nothing. One is the most extreme setting.

Mix/Tap: The mix allows you to set the wet and dry effect levels. The Output Tap Point selects the point that the wet signal is taken from in the effect chain. Changing this point can have some pretty dramatic effects.

Hints: You need to play with this to get the range of what it can do. Start with the presets and move things around. A little bit of experimenting will give you the feel for how it sounds.

High feedback settings can cause the effect to go into self oscillation. But, the modulation unit can pull the feedback level down too. So, it needs to be able to go to 1. The final output is protected by a hard clip at a linear level of 1.2. (This is outside the bounds of normal audio output levels.) If you hear a harsh digital clipping, you have probably exceeded this level. Backing off the feedback level or the output levels will stop the clipping. This is not something that normally occurs in PhaseDelayArray. It's just a just-in-case kind of protection measure.