

# ENVELOPE CONTROLLER PLUGIN

For the Kurzweil® PC3®

by Godlike Productions

## INTRODUCTION

Welcome to the Envelope Controller Plugin for the Kurzweil PC3 series of instruments. This plugin allows for remote control of a number of parameters that cannot commonly be controlled in real time for these instruments.

The plugin is available as a standalone for Windows (32 bit and 64 bit) and Mac OSX (64 bit – 1.6.8 onwards), and in VST format (32 bit and 64 bit for Windows, 64 bit for Mac OSX) and as a 64 bit AU plugin for Mac OSX. While the framework allows for Linux plugins, these are not currently available. To express your interest in a Linux plugin, please use the form at <http://godlike.com.au/index.php?id=contact> to let us know. If we get enough interest we will pursue a method to build this instance.

This plugin is built upon the Ctrlr framework (<http://ctrlr.org>), which itself is built upon Juce (<http://juce.com>). The plugin is designed to work with the Kurzweil PC3 series of keyboards, including the PC3 LE, PC3K, Artis® and Forte®<sup>1</sup>.

## THE BASICS

This plugin is designed to allow for control of envelopes on a single layer of a single MIDI channel (at any one time) of the connected keyboard. The way that Ctrlr works is that it is inserted into a MIDI channel of your DAW or plugin host and acts as an instrument, as opposed to an effect, or MIDI effect. As far as your DAW is concerned, this plugin is the end point of the MIDI channel.

The Ctrlr framework itself supports multiple MIDI channels and can be configured to allow for the transmission of multiple MIDI channels, only inserting the relevant MIDI messages into stream when required. As the control structure for envelopes requires a large number of MIDI messages, we've been careful to compress the MIDI data as much as possible so that it can be used alongside your sequencer.

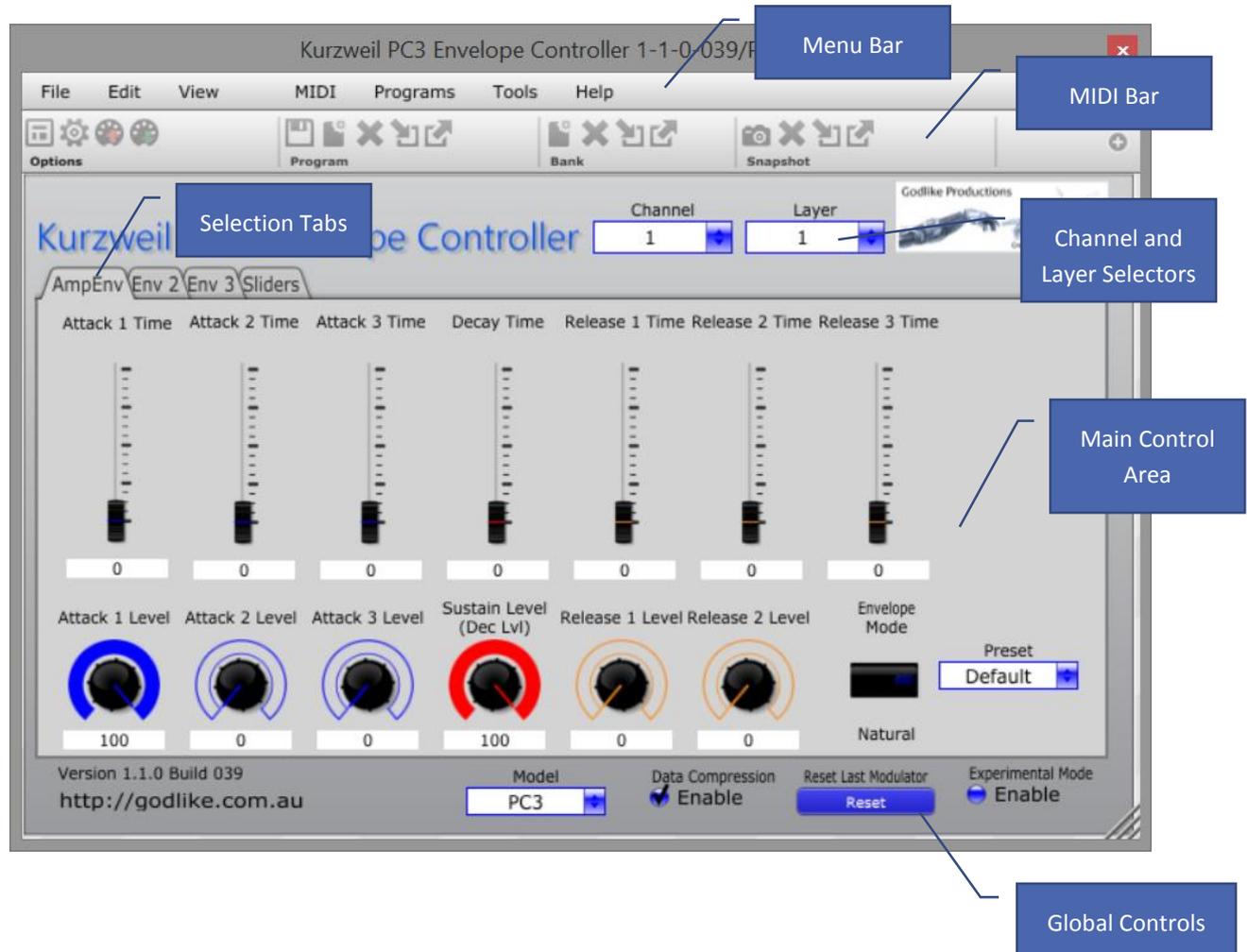
The plugin itself is "deaf", ie it doesn't listen to MIDI transmitted from the PC3. In standalone mode, this means that you must use the plugin virtual faders and knobs to control the PC3, and cannot assign them to be controlled by a MIDI controller. In a DAW host, it is possible to map the virtual faders and knobs to modulation sources, and to your MIDI controller using the DAW's functionality. The plugin currently will not adjust values to the current values in your PC3. When you move a knob or fader, it will immediately send a command to your synth and the synth will immediately set the parameter to that value.

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<sup>1</sup> Kurzweil®, PC3®, Artis® and Forte® are trademarks of Young Chang Co. Ltd. All other trademarks and copyrights are property of their respective companies.

## USER INTERFACE

The main sections of the user interface as displayed below.

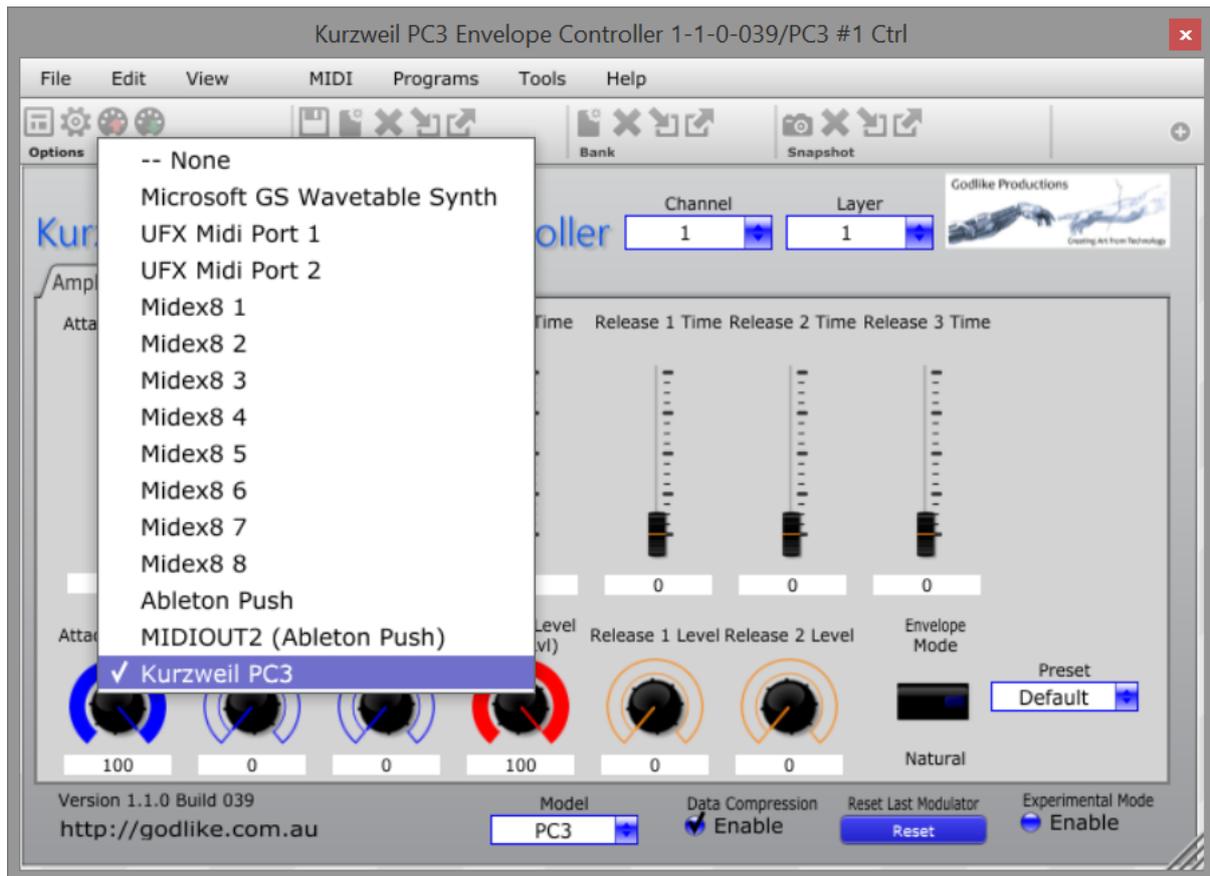


The areas should be pretty self-explanatory, but here's a bit more information. The Menu Bar and MIDI bar are part of the CtrlR framework. You can do stuff like save snapshots (fader positions), set MIDI settings and play with other parts of the ctrlr plugin.

The selection tabs let you pick which envelope you want to play with or select the sliders page, which emulate the PC3's panel sliders to make it easy to record automation.

Global controls are stuff that controls the entire plugin. Read on for more information.

The first step in using the plugin is to set the MIDI Interface. The plugin supports either the USB or MIDI DIN ports and must be selected within the plugin for both the standalone and the plugin version. This can be done either in the MIDI menu, or by using the MIDI In and Out buttons on the MIDI Bar.



It should be noted that in Windows, most MIDI interfaces (including the PC3 USB port) are not multi-client, and can only be selected in one piece of software at a time. Practically, what this means is that you should disable your PC3's MIDI interface from your host and select it in the plugin. You will need to set, as a minimum an output in this plugin for it to control your PC3.

For example, in Ableton Live, you would ensure that the Kurzweil PC3 MIDI Output is turned off in the preferences as below.

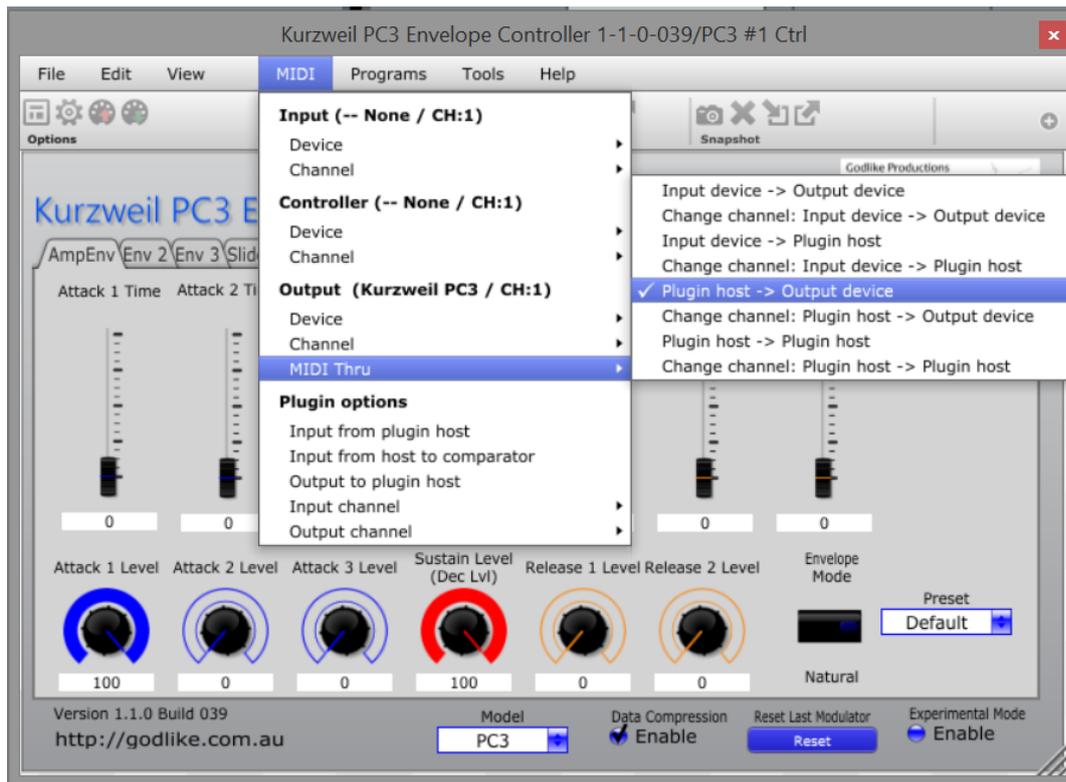


On Mac OSX you don't have this limitation and some Windows interfaces (notably some RME interfaces) are multi-client so don't suffer from this limitation. A good way to check is to go back up to the MIDI Out menu and see if there is a smiley face next to your PC3 interface.

To load the plugin up, drag and drop it onto a MIDI track



To ensure that note data gets through to the PC3 ensure that you turn on MIDI Thru host to output device, as per the figure below.



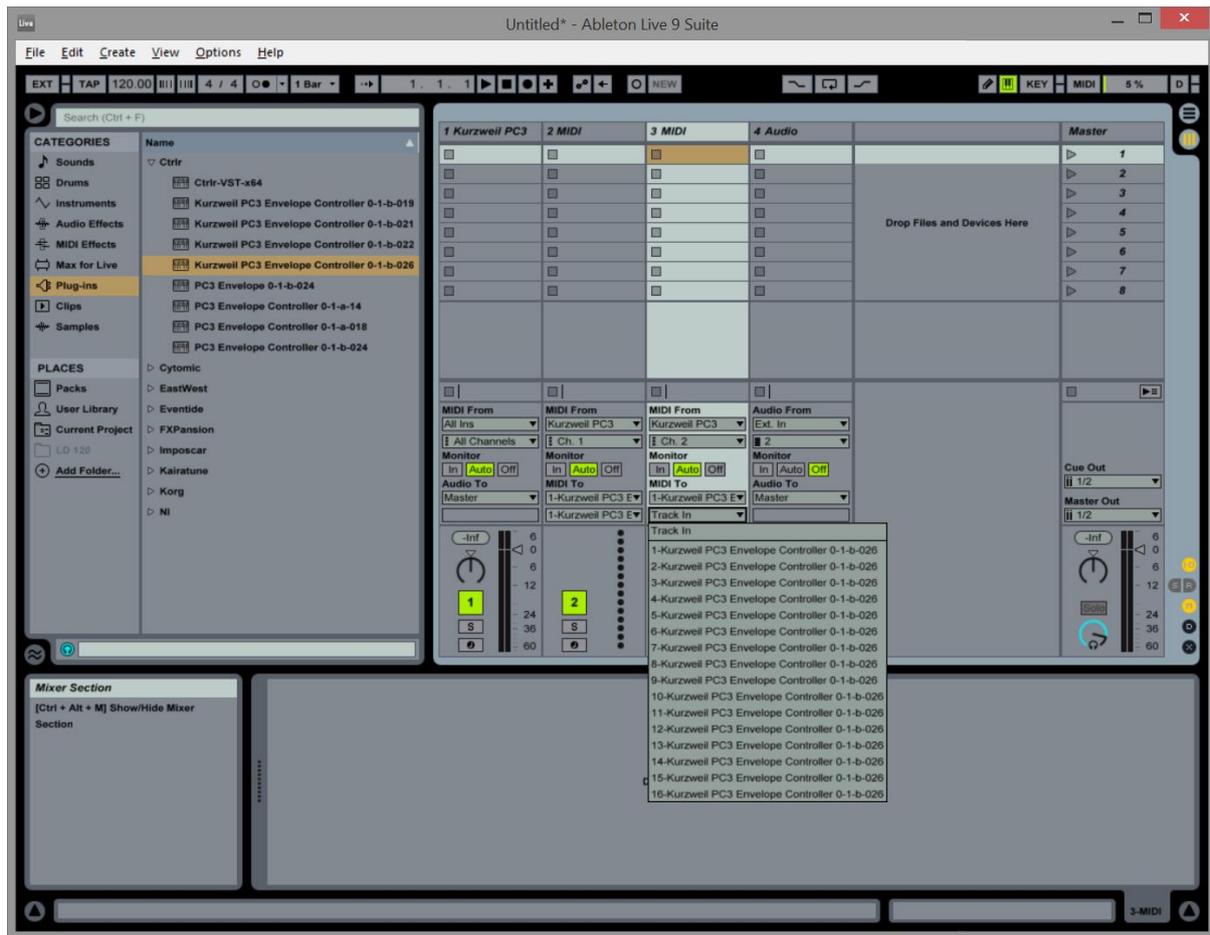
To use the plugin as the destination for multiple tracks in Ableton Live set the MIDI To parameter to “Kurzweil PC3 Envelope Controller 0-1-b-026” and then set the MIDI channel in the box below, as per the following diagram.

Sorry for the blank space – thought you’d appreciate the big picture on the next page rather than me trying to cram stuff into this gap.

Here’s a picture of a cool modular synth to fill up a bit of space....



Thanks to Stephen Drake for sharing the picture to Wikimedia commons - [https://commons.wikimedia.org/wiki/File:Analog\\_Test\\_Array\\_modular\\_synth\\_by\\_sduck409.jpg](https://commons.wikimedia.org/wiki/File:Analog_Test_Array_modular_synth_by_sduck409.jpg)



## MIDI CHANNELS AND LAYERS

The Kurzweil series of instruments (collectively referred to as the PC3 in this manual) are all multitimbral and generally respond to all 16 MIDI channels. The MIDI channel selected in the dropdown box ONLY applies to the virtual knobs and sliders on the plugin. All other data from your DAW will pass through without changing (ie it won't be re-channelized).

A program on the Kurzweil PC3 can have up to 32 layers and the layer combo box allows you to set which layer you want to control. This layer is global to all controls on the AmpEnv, Env2 and Env3 pages. The Sliders page will control whatever sliders A-I are set to control on your PC3, or the main physical controls of your PC3LE, Artis®, Forte®, SP4, SP5 of K2 series instrument..

It's important to remember that automation data sent to the plugin cannot distinguish which layer it was recorded for. For example, if you record layer 1 Attack 1 Time slider and change layer to Layer 2, when you play back the automation, it will now control Layer 2. It is possible to automate the layer combo if you choose, to overcome this limitation somewhat, but remember that the Layer button is global to plugin.

This plugin is really best suited to controlling single layer sounds. Future plugins will focus on control of multiple layers and channels at the same time.

## GLOBAL CONTROLS

There are 4 global controls at the bottom of the plugin. These are explained below.

### DATA COMPRESSION

The Data Compression button enables the data compression algorithm for reducing MIDI bandwidth. This button reduces the amount of data transmitted by 5 bytes out of every 7. If you are running a single instance of the plugin and are not running the editor, then keep the control enabled. If the plugin gets confused and appears to be controlling the wrong parameter, press the Reset Last Modulator button and the next message sent will be a full message which should set things right.

*Tip: Here's a little known tip. The PC3's MIDI DIN input and USB input can both be used at the same time, and can both host a plugin with different channel and layer settings. This is a way to control 2 Channels/layers at the same time. If you do this, ensure that Data Compression is switched off in both instances of the plugin, or weird stuff will happen, and you'll end up controlling random parameters.*

### RESET LAST MODULATOR

As detailed above, pressing this button will disable data compression for the next message sent. If the plugin seems to be controlling the wrong parameter, press this and it should fix the problem. You are most likely to encounter this if you change channels or layers and you use the same knob or button as you were using immediately before the channel or layer change.

### EXPERIMENTAL MODE

This is officially unsupported, by anyone, especially the wonderful folk at Kurzweil. If you press this button and weird stuff happens, please don't bug Kurzweil's tech support. Instead tell us of your experiences over at <http://cunka.com>

Essentially, what enabling experimental mode will do is change the maximum and minimum values for most of the envelope controls. You will be able to push levels to 127% and even set negative levels for the amp envelope, which gives some unusual effects. You can even save your creations from the front panel of the PC3 for posterity.

Use at your own risk!

### MODEL

Changing the model will affect only the sliders page. It will set up sliders appropriate to the chosen Kurzweil model to replicate the front panel sliders. These sliders are linked to the channel parameter, and can also respond to movements on your synth, if your MIDI Input and MIDI Controller settings are correct.

Kurzweil PC3 Envelope Controller 1-1-0-039/PC3 #1 Ctrl

File Edit View MIDI Programs Tools Help

Options Program Bank Snapshot

Kurzweil PC3 Envelope Controller Channel 1 Layer 1

AmpEnv Env 2 Env 3 Sliders

Volume Pitch Wheel Mod Wheel SW1 SW2 SW3 SW4 SW5 SW6 SW7 SW8 SW9 SW10

A B C D E F G H I

127 0 0 0 0 0 0 0 0 0 0 0

SW Sust Pan 0

Version 1.1.0 Build 039  
http://godlike.com.au

Model: Artis/Forte Data Compression: Enable Reset Last Modulator: Reset Experimental Mode: Enable

Kurzweil PC3 Envelope Controller 1-1-0-039/PC3 #1 Ctrl

File Edit View MIDI Programs Tools Help

Options Program Bank Snapshot

Kurzweil PC3 Envelope Controller Channel 1 Layer 1

AmpEnv Env 2 Env 3 Sliders

Volume Pitch Wheel Mod Wheel A B C D E F G H

127 0 0 0 0 0 0 0 0 0 0

Sust Pan 0

Version 1.1.0 Build 039  
http://godlike.com.au

Model: K2 Series Data Compression: Enable Reset Last Modulator: Reset Experimental Mode: Enable

Kurzweil PC3 Envelope Controller 1-1-0-039/PC3 #1 Ctrl

File Edit View MIDI Programs Tools Help

Options Program Bank Snapshot

Kurzweil PC3 Envelope Controller Channel 1 Layer 1

AmpEnv Env 2 Env 3 Sliders

Volume Pitch Wheel Mod Wheel A B C D E F G H I

127 0 0 0 0 0 0 0 0 0 0 0

SW Sust Pan 0

Version 1.1.0 Build 039 http://godlike.com.au

Model PC3 Data Compression Enable Reset Last Modulator Reset Experimental Mode Enable

Kurzweil PC3 Envelope Controller 1-1-0-039/PC3 #1 Ctrl

File Edit View MIDI Programs Tools Help

Options Program Bank Snapshot

Kurzweil PC3 Envelope Controller Channel 1 Layer 1

AmpEnv Env 2 Env 3 Sliders

SW1 SW2 SW3 SW4 SW5 SW6 SW7 SW8 SW9 SW10

Knob 1 Knob 2 Knob 3 Knob 4 Knob 5

Knob 6 Knob 7 Knob 8 Knob 9 Knob 10

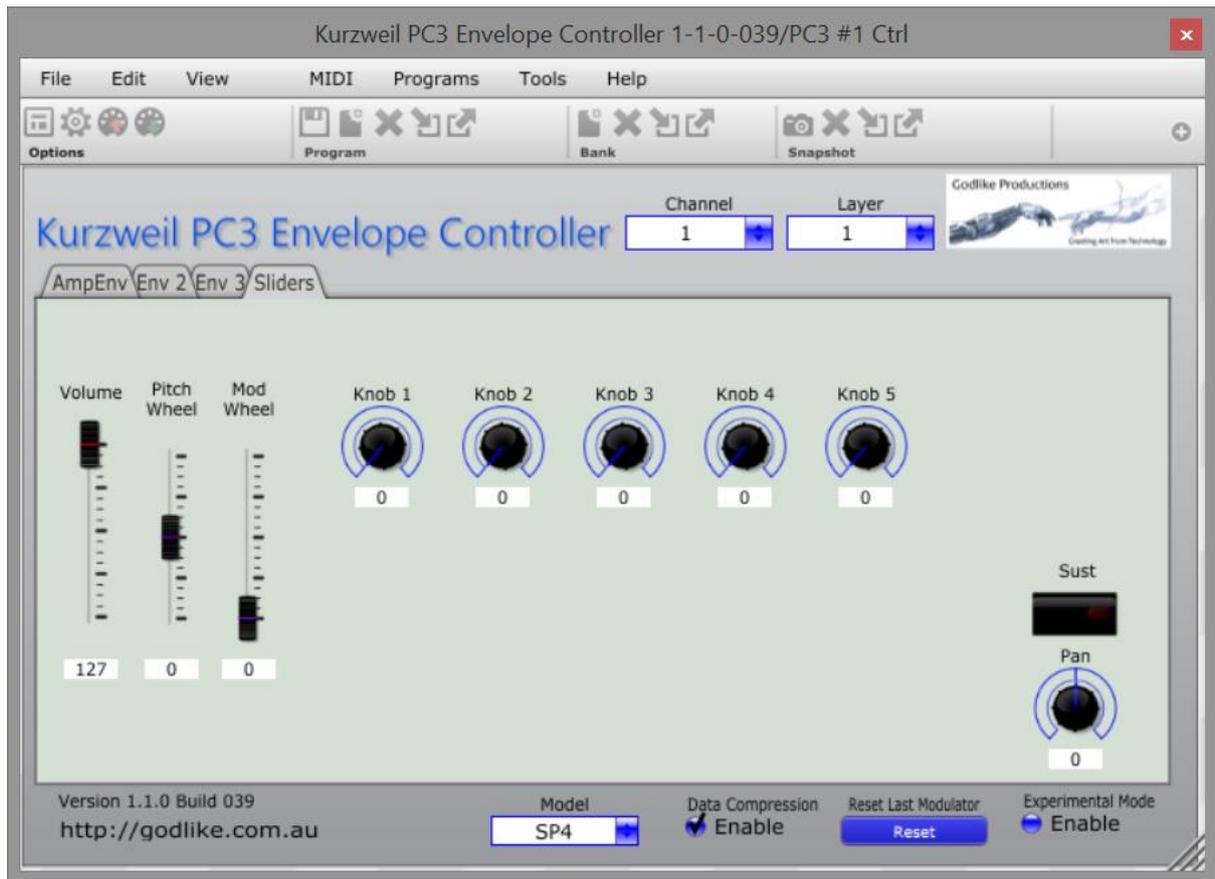
Knob 11 Knob 12 Knob 13 Knob 14 Knob 15

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

SW Sust Pan 0

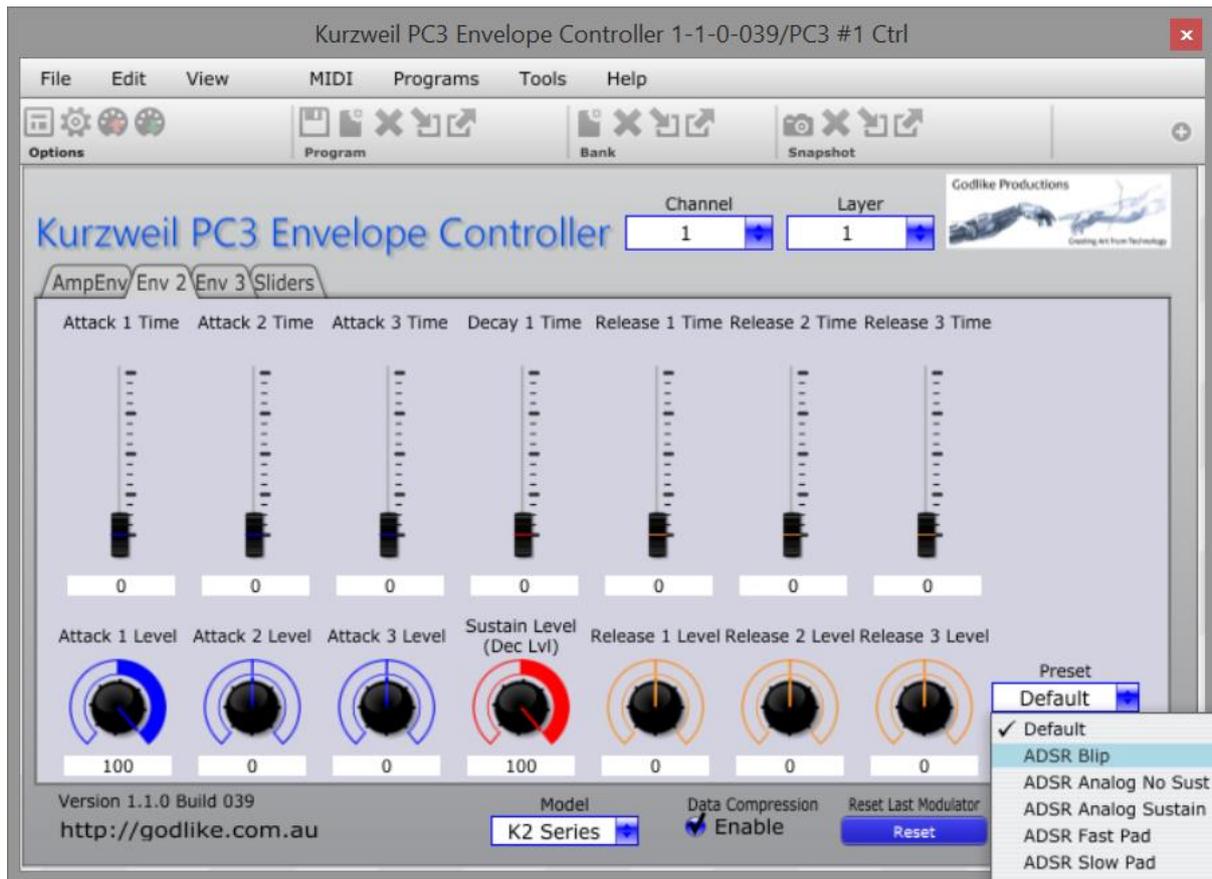
Version 1.1.0 Build 039 http://godlike.com.au

Model SPS/PC3LE Data Compression Enable Reset Last Modulator Reset Experimental Mode Enable



## PRESETS

For the Amp Envelope, Envelope 2 and Envelope 3 a range of presets have been provided to make setting envelopes quick for a number of scenarios. In most cases all of the sliders and knobs for a particular envelope will change. Exceptions are the presets that refer to attack or release, in which case only the attack or release segments will be changed.



## FINAL WORDS

First let me thank all of my patient beta testers for finding the bugs and for some great suggestions about usability of the plugin.

Secondly thank you to the admin and moderators at Cunka for hosting my beta and support forums.

Finally thanks to you guys for giving this plugin a go. It won't be the last thing that we build for the Kurzweil series of instruments, and now that we've demonstrated that it can be done, we have much more ambitious plans.

If you wish to support us, you can donate via our website at <http://godlike.com.au>

For a \$5 donation I'll create a special build for you featuring your name or logo on the panel (we'll email you for your specifications.) For \$25 we'll do a custom skin for you if you provide a 700 x 420 pixel png of your background and/or knob png's. Please contact us either through our website, or on the cunka forums if you want more information about how to build knobs.

If you really, really want a customized skin and don't have the skills or motivation, but are prepared to part with a bit of green (money, that is, not herbal currency), please contact us for our hourly rates to do this work.

These options are currently only available for Windows, as I don't currently have a mac that I can compile the files on.