WAVES

Kramer PIE Compressor

User Guide

WAVES

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Chapter 1 – Introduction

1.1 Welcome

Thank you for choosing Waves! In order to get the most out of your Waves processor, please take the time to read through this manual.

In conjunction, we also suggest that you become familiar with www.wavesupport.net. There you will find an extensive **Answer Base**, the latest **Tech Specs**, detailed **Installation** guides, new **Software Updates**, and current information on **Authorization** and **Registration**.

By signing up at www.wavesupport.net, you will receive personalized information on your registered products, reminders when updates are available, and information on your authorization status.

1.2 Product Overview

About the Kramer PIE Compressor

The PIE was modeled on the dynamics processor known as the Pye Compressor, a solid state unit that was manufactured during the 1960s by Pye Telecom. The Cambridge, England-based company originally manufactured military wireless communication devices, later venturing into the television and professional broadcast equipment markets. Pye manufactured a limited number of sound consoles with these compressors built-in, and which were popular enough that the Neve company made a compressor that could fit and replace the Pye compressors in its form factor. While it may well be that the Neve replacements are harder to find than the originals, there is less demand for them than the actual Pye compressors.

As an engineer at London's Olympic studios during the classic rock era, almost everything Eddie Kramer recorded during that era passed through the Pye compressors.

1.3 About the Modeling

Many different elements contribute to the unique sonic behavior of analog gear. Waves painstakingly modeled and incorporated the characteristics of the hardware into the Kramer PIE, in order to fully capture and replicate the sound and performance of the original equipment. The hardware was modeled at reference levels of -18 dBFS = +4 dBu, meaning that a signal of -18 dBFS from the DAW to the hardware unit will display a meter reading of 0 VU (+4 dBu).

These are some of the most important elements of analog behavior:

- **Total Harmonic Distortion**
  Perhaps the most important analog behavior is Total Harmonic Distortion or THD, which is defined as the ratio of the sum of the powers of all harmonic components to the power of the fundamental frequency. THD is usually caused by amplification, and changes signal shape and content by adding odd and even harmonics of the fundamental frequencies, which can change the overall tonal balance. THD can also change peak output gain, usually by no more than +/- 0.2-0.3 dB.

- **Transformers**
  Some hardware uses transformers to stabilize or change Input/Output loads and signal levels. In earlier days, transformers did not have a flat frequency response, and often introduced low and super-high frequency roll offs. The original channel has transformers which cause high-frequency roll off, so if you encounter loss above 10 kHz, this is due to the modeled transformers.

- **Hum**
  Waves modeled both 50 Hz power current and 60 Hz power current. If you listen closely, you will hear that there is a difference in hum level between 50 Hz and 60 Hz. Since hum is unique to each region and dependent upon the local electrical conditions, you may find that the modeled hum is different than the hum already present in your studio, and may not be suitable for your particular use.

- **Noise**
  All analog equipment generates internal noise or a noise floor. In vintage equipment, the noise floor is sometimes quite high and colored. Waves modeled the noise to match the level and color of noise exhibited by the original unit, both with and without signal present.

1.4 Components

WaveShell technology enables us to split Waves processors into smaller plug-ins, which we call **components**. Having a choice of components for a particular processor gives you the flexibility to choose the configuration best suited to your material.

The Kramer PIE Compressor has two component processors:

Kramer PIE Stereo — Two-channel compressor, with one detector for both channel paths

Kramer PIE Mono — One-channel compressor

Chapter 2 – Quickstart Guide

The Kramer PIE offers 3 main compression controls:

- Use the Threshold control to control the level at which the compressor activates, beginning attenuation. Watch the VU meter needle to determine when attenuation begins, and adjust your settings accordingly.

- Use the Compression Ratio control to set the amount of gain change that will be applied to signal overshooting the threshold.

- Use the Decay Time control to set the speed at which the compressor will return to unity gain when the signal falls below the threshold. Faster decay times will produce louder sound with more harmonic distortion; slower decays will result in a smoother sound with less loudness and distortion.

- Use the Output gain control to set the level that you wish to hear. This will not affect the compression, rather just the output level.

Chapter 3 – Interface and Controls

3.1 Kramer PIE Interface

3.2 Kramer PIE Controls

Threshold sets the gain reference point beyond which compression begins.

Range
-24 to +16 dB (in 2 dB steps)
Default
+16

Ratio controls the amount of gain reduction for signal above the threshold.

Range
1:1, 2:1, 3:1, 5:1, Lim
Default
3:1

Decay Time (Release Time) sets the recovery speed of the gain attenuation when the input drops below the threshold.

Range
1, 2, 4, 8, 16, 32 (hundredths of milliseconds)
Default
4

Output sets the output level.

Range
-18 to +18dB.
Default
0

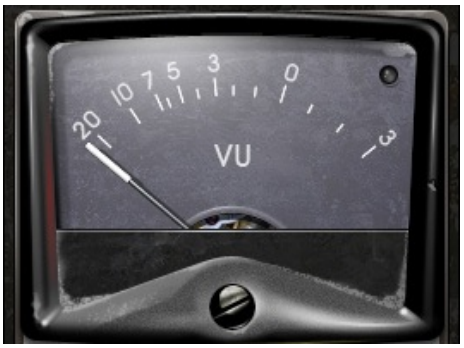
Meter Select toggles between Input, Output, and Gain Reduction metering.

Range
Input, Output, Gain Reduction
Default
Gain Reduction

Analog controls analog characteristics caused by noise floor and hum, based on the power supplies of the original units.

Range
50 Hz, 60 Hz, Off
Default
50 Hz

VU Meter displays input or output level in dBVU and gain reduction with smooth analog modeled ballistics. Please note: The PIE Stereo component meter displays the sum of both channels. The same signal fed to both channels will show an increase of 6 dB. If this is problematic, use the VU Calibration function to compensate.



Clip LED lights up when levels exceed 0 dBFS. Click to reset.

VU Calibrate controls the VU meter headroom calibration.

Range
24 – 8dB
Default
18 dB of headroom (0 dBVU = -18 dBFS)

Please note: The VU Calibration control is represented by the little screw-head right below the VU meter display. It does not have a visible label and, for most users, the 18 dB default headroom should be the best choice. However, if you use outboard gear in your studio and your VU meters are calibrated for 14 dB headroom, the PIE allows you to calibrate its VU meter as well.

Chapter 4 – The WaveSystem

4.1 The WaveSystem Toolbar

All Waves processors feature the WaveSystem toolbar which takes care of most administrative functions you will encounter while working with your Waves software. The features of the WaveSystem toolbar are the same on practically all Waves processors, so familiarity with its features will be helpful whichever processor you are using.

Toolbar Functions

Undo	Undoes the last 32 actions.
Redo	Redoes the last 32 undone actions.
Setup A/B	Toggles between two presets. This is useful for close comparison of different parameter settings
Copy A->B	Copies the current settings to the second preset register
Load	Recalls presets from file
Save	Saves presets in the Waves file formats
?	Opens the manual for the processor you are using.

4.2 Preset Handling

Preset Types

Factory Presets are permanent presets in the Load menu. Factory presets cannot be over-written or deleted. When applicable, different component plug-ins may have different factory presets.

User Presets are your favorite settings of the plug-in saved as a preset in the Load menu, under ‘User Presets’. User Presets can be over-written and deleted.

Setup Files may contain more than one preset. For example, a single file can contain all the presets for a session. When you open a Setup File, all its setups become part of your Load pop-up menu for fast access. This can be particularly useful with multiple instances of a plug-in in a single session. By saving all the settings you create into a single Setup File, they can all be quickly available for every instance of that plug-in.

Loading Presets and Setups

Click-and-hold on the Load button to see the Load pop-up menu. The menu is divided into four sections. If a section is not currently available it will not appear in the Load pop-up menu.

Open Preset File…	Select to open any setup or preset file, whether from the Library or your own creations.
'Filename.xps':	Displays any currently loaded Setup File and its presets.
Factory Presets:	Displays the default Factory Presets.
User Presets:	Displays any loaded User Presets.

Saving Presets and Setups

Click-and-hold on the Save button to see the Save pop-up menu. Four options are available. If an option is not currently available it will be grayed out and inaccessible.

Save to New File…	Select this to start a new Setup file. There are two prompts - first for the setup filename, then for the preset name. You must provide a name for both the setup file and the preset. Click OK (ENTER) to complete the save. It is a good idea to create a folder in which to save several setup files for a project.
Save 'File Name' – "Preset Name"	Overwrites the settings of the loaded preset (whether a User Preset or a preset from a Setup File) with the current settings. If a Setup File is currently loaded, the name of the Setup File is displayed followed by the name of the preset itself. If a User Preset is loaded, its name is displayed.
Save to 'File Name' As…	Saves the current settings as a new preset into the Setup file that is open (if one is not open, the option is grayed out). You will be prompted to give the preset a name.
Put into Preset Menu As…	Save the current settings into a User Preset that will always be in your Load menu (until deleted). You will be prompted to give this preset a name. User Presets are stored in the plug-in's preference file.

Deleting Presets

You may delete User Presets and presets within a Setup File. Factory Presets and Setup Library files cannot be deleted or overwritten.

1. Hold the Command (Mac)/Control (PC) key down.
2. Click-and-hold the Load button to see the pop-up menu.
3. While still holding the Command/Control key, select the preset or setup to delete.
4. A confirmation box will appear, allowing you to cancel or 'OK' the deletion.

A/B Comparison and Copying

The Setup A/Setup B button may be clicked to compare two settings. If you load a preset in the Setup B position, this will not affect the preset loaded into the Setup A position, and vice-versa.

If you want to slightly modify the settings in Setup A, you can copy them to Setup B by clicking on the Copy to B button, then alter Setup A and compare with the original Setup B.

The name of the current setup will be shown in the title bar (on platforms which support it), and will switch as you change from Setup A to Setup B.

Note: an asterisk will be added to the preset name when a change is made to the preset.

4.3 Interface Controls

Controls can be in one of three states:

- **Not Selected** where the control is not the target of any user entry
- **Selected** where the control is the target of mouse control entry only
- **Selected and Active** where the control is the target for both mouse and keyboard entry

Toggle Buttons

Toggle buttons display the state of a control, and allow switching between two or more states. **Single-click** to change the control's state. Some toggle buttons have a text display which updates with the current setting, and others (bypass, solo, or monitoring toggles) illuminate when the control is active.

Some processors have **link buttons** between a pair of toggle buttons, allowing click-and-drag adjustment while retaining the offset between the controls.

Value Window Buttons

Value windows display the value of a control and allow **click-and-drag** adjustment, or **direct control via the keyboard**.

- **Using the mouse**, click-and-drag on the value window to adjust. Some value windows support left/right, some up/down (as you hover over a button, arrows will appear to let you know which direction of movement that button supports).
- **Using the arrow keys**, click once with mouse to select the button, and then use up/down – left/right (depending on the direction supported by that button) to move in the smallest incremental steps across the button's range (holding down the arrow keys will move faster through the range).
- **Using key entry**, double click on the button to open the value window, and directly enter the value from your keyboard. If you enter an out of range number, the button stays selected but remains at the current setting (system beeps? If system sounds are on?)

Some processors have **link buttons** between a pair of value windows, allowing click-and-drag adjustment while retaining the offset between the controls.

Sliders

Click on the slider itself or anywhere within the sliders track. The numerical value of the slider settings is displayed in a hover window above the slider path.

Hover Box

Hovering boxes will appear and display the control value when hovering with the mouse over the control.

TAB Functions

TAB moves the 'selected' status to the next control, with shift-TAB moving in the reverse direction.

Additionally, the Mac has an option-TAB function for 'down' movement and shift-option-TAB for 'up' movement where applicable.

If you have several Value Window Buttons selected, TAB functions will take you through the selected controls only.