# Table of Contents

1. Introduction.

The Pulsor is a VST plug-in synthesizer offering brand new concepts in both synthesis engine and in user interface!

Not familiar with *Pulsors* and *Phazors*? The chances are that you won't be since these are at the heart of a brand new synthesizer engine.

Don't worry about this for now, simply download ***The Pulsor*** (if you haven't already done so) and try it out.

Why should a software synthesizer have to look like a box with knobs and a display? ***The Pulsor*** replaces the knobs and display with mouse friendly, color coded, parameter editors. This approach gives ***The Pulsor*** its radical new look.

The Pulsor Edit Window
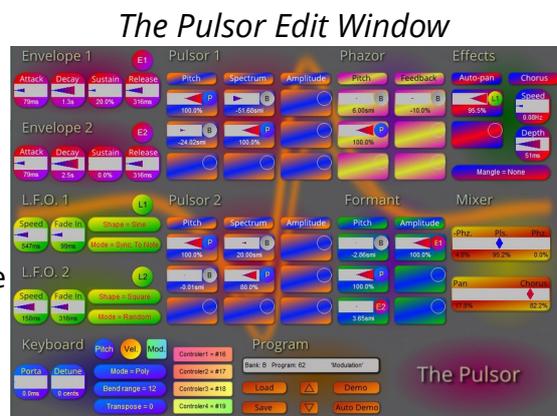
The Pulsor is designed so that every parameter is <u>always</u> visible in the editor window and is only a couple of clicks away from being edited. ***The Pulsor's*** user interface is specifically designed to not interrupt your creative flow.

<u>Don't read the manual!</u> OK so you're reading it now, but ***The Pulsor*** is intended to be as intuitive as possible so that once you've grasped a few basic concepts, it's operation will be obvious. The manual is only intended to be there for reference if you really need it.

Installation.

Trial Version, Full Version & Updates.

We strongly recommend that you install the trial version first so that you can try ***The Pulsor*** before you buy it. The trial version is fully functional but is time limited to 30 days. You can purchase the full version of ***The Pulsor*** from the [Maverick-Synth](#) web site. You can do this at any time, even after the trial has expired, and all the sounds you have created will be unaffected.

Once you have purchased the full version of ***The Pulsor*** you are entitled to to unlimited free updates. When a new update is available, it will be announced on the [Maverick-Synth](#) web site, in the Maverick Synth Newsletter and via social media. Updating ***The Pulsor*** will not affect any of the sounds you have created

PC Installation.

The trial version, the full version and any updates for **The Pulsor**, are all downloaded as a Windows ".msi" installation file. To install any version of **The Pulsor**, simply run this install file and you will be guided through the installation.

Most Digital Audio Workstations (DAWs) like to have all their plug-ins situated in the same directory. The installer will invite you to navigate to this directory. Otherwise, by default, the files will be copied into into a new folder in your "Documents" directory. This allows you to then manually copy them into your plug-in directory.

The installer will copy the following files into your chosen directory:

- "ThePulsor.dll" The Pulsor plug-in DLL.
- "read me.txt" A text file containing the latest release notes.
- "ThePulsorManual.pdf" A copy of this manual.

Trying The Preset Sounds.

What does **The Pulsor** sound like? **The Pulsor's** powerful demo feature allows you to hear each supplied sound playing a short sequence of music appropriate to that sound. This gives you much more of a feeling for what the sound is like than just hitting a key and hearing it going beep!

Click on the bank and program display to select a new sound from a menu.

The *Demo* button plays a short demo sequence of the current sound.

The *Auto Demo* button loops the demo of the current sound and automatically starts the demo of any newly selected sound.

Clicking the *Auto Demo* button again stops this feature.

The up arrow and down arrow buttons are used to quickly select the next and previous sounds.

Program

Bank: B   Program: 23   'Space bagpipe'

Load   △   Demo

Save   ▽   Auto Demo

Help

Once you've mastered the basic concepts of **The Pulsor**, you shouldn't need a great deal of additional help as everything you need to create new sounds is immediately visible in **The Pulsor** editor window. However, there are three sources of information should you need it:

- This manual which contains everything you need to know about **The Pulsor**.

- The on screen help system, described below, which gives you a pop-up help window for each aspect of **The Pulsor**.

- The Maverick support page which can be found at:
  maverick-synth.com/pages/pulsor-support.

The On Screen Help System

The on screen help system offers a quick reference system which is instantly available from **The Pulsor** edit window.
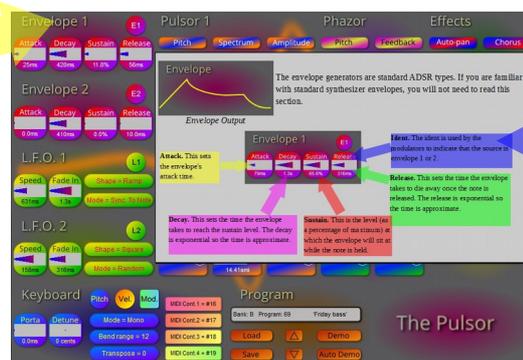
Experiment

Finally – experiment! **The Pulsor** has been designed to be as intuitive and user friendly as possible. The supplied sounds are only intended to be a starting point. Experiment and surprise yourself. Be creative – come up with some new sounds – something different.

2. Editing Basics

There are two things you will immediately notice about the editor window of **The Pulsor**.

1. It is strictly "what you see is what you get". There are no sub menus – no "displays" – no hidden parameters.

2. There is not a knob in sight. The job of changing values is done by "Editors".

To change a value using an editor, simply left click in its middle section and drag the mouse right to increase the value or left to decrease the value.

The rate the value changes, as you move the mouse, depends on the speed of movement. Moving the mouse slowly allows you to change the value very gradually to achieve very accurate settings. Dragging the mouse quickly changes the value a larger amount making
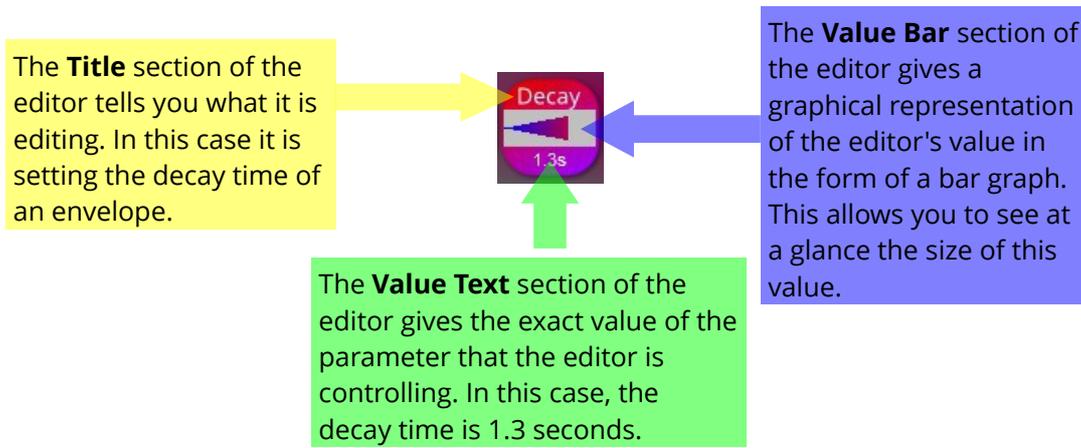
large changes in the value a simple task.

You will note that all the controls in *The Pulsor* are distinctive shapes and colors. The shape of a control tells you what type of control it is and the color tells you what section it is in.

The rest of this chapter explains the various control types.

Value Editors

Value editors are used to modify continuously variable or *value parameters*. Here is a typical value editor – in this case editing an envelope decay.
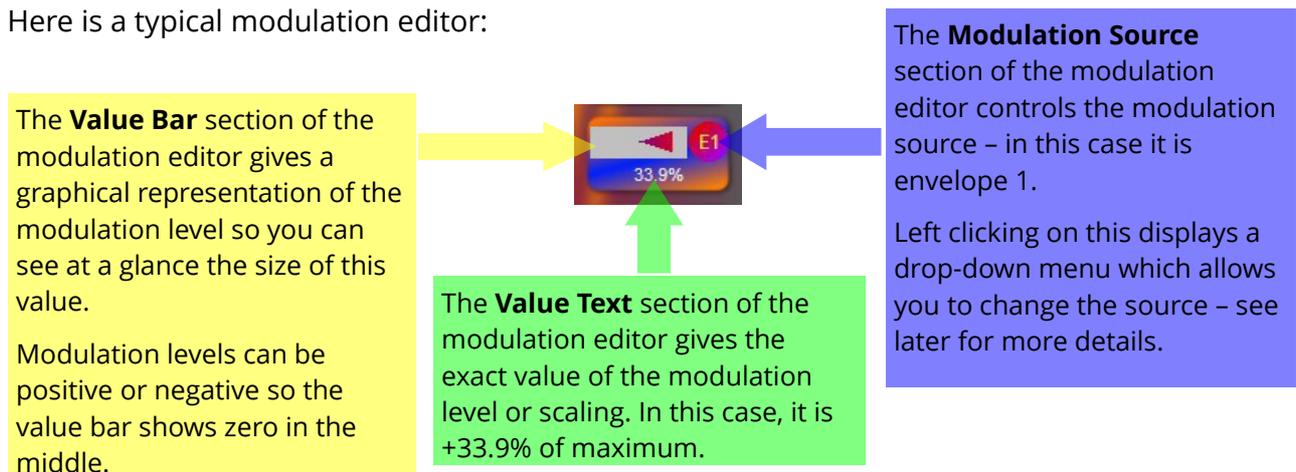
Value editors are divided into three sections:

The **Title** section of the editor tells you what it is editing. In this case it is setting the decay time of an envelope.

The **Value Bar** section of the editor gives a graphical representation of the editor's value in the form of a bar graph. This allows you to see at a glance the size of this value.

The **Value Text** section of the editor gives the exact value of the parameter that the editor is controlling. In this case, the decay time is 1.3 seconds.

Modulation Editors

Modulators control how the sound changes over time. They are explained in detail in the next chapter on *The Pulsor* synthesis engine.

Here is a typical modulation editor:

The **Value Bar** section of the modulation editor gives a graphical representation of the modulation level so you can see at a glance the size of this value.

Modulation levels can be positive or negative so the value bar shows zero in the middle.

The **Value Text** section of the modulation editor gives the exact value of the modulation level or scaling. In this case, it is +33.9% of maximum.

The **Modulation Source** section of the modulation editor controls the modulation source – in this case it is envelope 1.

Left clicking on this displays a drop-down menu which allows you to change the source – see later for more details.
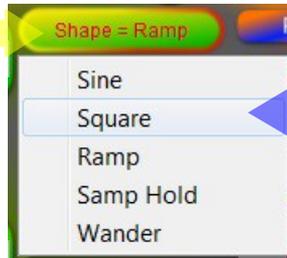
Drop-downs

Drop-downs have curved ends. They are used to select a setting from a list of possible values. Here is a typical drop-down for selecting an L.F.O. waveform.

The drop-down itself displays the current selection for the list parameter. In this case the L.F.O. shape is a ramp wave.

Left clicking on the drop-down causes the options available, for the list parameter, to be to be shown in a drop-down menu.

Shape = Ramp

Sine
Square
Ramp
Samp Hold
Wander

Selecting the required option, from the drop-down, will now cause it to be displayed in the drop-down itself.

Click anywhere else in *The Pulsor* window to cancel the drop-down.

Other Controls

There are a number of other controls in **The Pulsor** editor. These have specific functions which will be described in later chapters when their functionality is detailed.

These controls are the mixer editors, the MIDI control select buttons and the program selection controls.

3. The Pulsor Synthesis Engine

The Pulsor synthesis engine includes a number of brand new synthesis features as well as a unique user interface. This chapter explains this new synthesis engine

Modulators

Modulators control how the sound changes over time. You will notice that almost every sound parameter in ***The Pulsor*** is controlled by a set of two or three modulators.

Here is a typical modulator setup, in this case it is controlling the pitch of a pulsor.

The title tells you what this group of modulators are controlling – in this case pulsor pitch.

Here, the note pitch is scaled to 100% so the pulsor pitch will be in tune with the note.

The 2nd modulator source is set to 'B' or <u>base</u>. This modulator tunes the pulsor down a fixed value of just under an octave.

The source selector is a colored round circle with a letter in it. This indicates the source of the modulation.

In this case, 'P' stands for note pitch. The modulator sources are all listed below.

Here, the 3rd modulator is inactive. This is indicated by the source selector being a transparent circle and the value not being shown.

Modulator Sources

Modulators can get their modulation from one of a number of sources. Below they are lined up for descriptive rather than musical purposes.

Unused. There are three modulators available for each parameter. However, they may not all be required in which case the modulator is set as inactive This is indicated by the source selector being a transparent circle.

Pitch. The pitch source is the output of the keyboard controller in semitones. This source includes key note, portamento and pitch bend.

L.F.O. The L.F.O. sources (L1 & L2) connect one of the L.F.O.s to the modulator. The modulation can be either positive or negative although this only really affects the ramp waveform.

Base. The *base* source adds a fixed, constant, amount to the output of the modulator. Think of it as the basic 'amount' knob on a conventional synthesizer.

Note that adding a base modulation to an amplitude will cause the voice to sound all the time – be sure this is what you want.
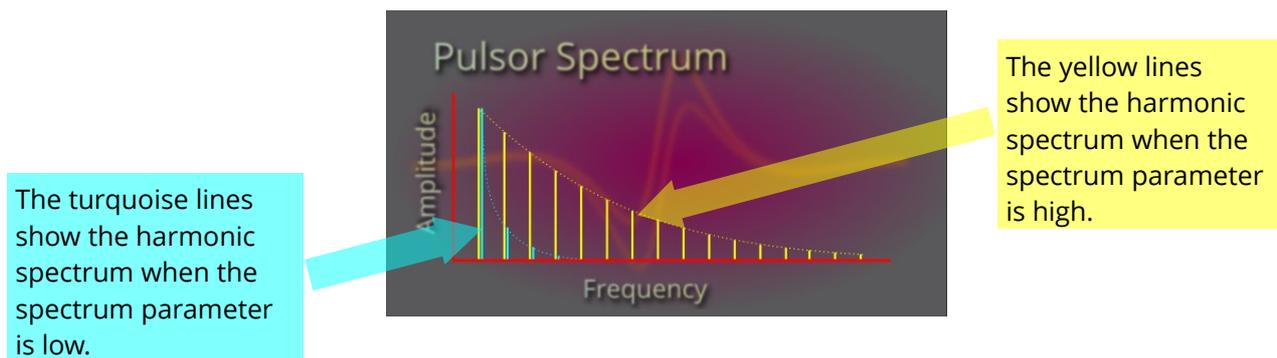
Envelope. The envelope sources (E1 & E2) connect one of the envelopes to the modulator. The modulation can be either positive or negative.

Velocity. The velocity source is an amount dependent on the key velocity, used for adding expression to your playing.

The Pulsor

To help find out how a pulsor behaves, load the "Pulsor Demo" sound (Bank A, Number 128) and play a few notes or listen to the demo sequence. A pulsor simply outputs a stream of pulses which create a harmonic spectrum.

This spectrum can be dynamically controlled by the spectrum parameter. This can be varied between a "soft" sounding spectrum with very few harmonics and a "bright" sounding spectrum with a lot of harmonics.

The turquoise lines show the harmonic spectrum when the spectrum parameter is low.

The yellow lines show the harmonic spectrum when the spectrum parameter is high.

Pulsor Parameters

There are three parameters that control a pulsor.

Pitch. The pitch parameter controls the basic frequency / pitch of the pulsor.

Typically, as here, it will be set to 100% of the pitch source. This means that the pulsor will sound in tune with the note played.

Amplitude. The *amplitude* parameter simply controls the level of the pulsor's output.

Typically, as here, it will be modulated by an envelope.

If very short attack times a required it is recommended that you use envelope 1 – see the section on envelopes for more details.

Spectrum. The spectrum parameter controls the harmonic content of the pulsor – as described above. If it's zero, the pulsor produces a sine wave and if it is set to a high value, the pulsor produces a spectrum rich in harmonics.

Here, the spectrum is set to 100% of the pitch source so that the spectrum stays the same for all notes. The *base* source is set to 12 semitones giving a moderate amount of spectral content.

Experiment by adding extra modulations to *Pulsor 1*.

Pulsor 2 is initially disabled in the "Pulsor Demo" sound (Bank A, Number 128). Now set *Pulsor 2* to output sound by setting it's first (top) amplitude modulator to envelope 1 and its second (middle) amplitude modulator to velocity.

Pitch. The pitch parameter here has, in addition to the pitch modulation, a base modulation. This sets the *pulsor 2's* pitch 7 semitones (a fifth) above the pitch of *pulsor 1*.

Amplitude. Here, the amplitude parameter has a key velocity modulation.

This means that if the key is played louder *pulsor 2* will sound louder relative to *pulsor 1*.

Spectrum. The spectrum parameter is now controlled by envelope 2. This means that its timbre is initially bright and decays away almost to a sine wave. This is similar to the way the sound on instruments like pianos evolves.

The higher the level of envelope modulation, the more pronounced this will be.

Again, experiment with different modulation sources and amounts.

The Phazor

To help find out how a Phazor behaves, load the "Phazor Demo" sound (Bank A, Number 127) and play a few notes or listen to the demo sequence.

The Phazor actually consists of a short delay line, the output of which can be fed back to the input causing the delay line to ring at a certain frequency. The phazor delay time is very tightly controlled and is actually defined in terms of <u>pitch</u>. This pitch can be controlled dynamically by any modulation source.

The phazor can be used to subtlety alter the timbre of the sound, by reinforcing or canceling certain harmonics, or to create radical ringing sounds. This variation is achieved using the feedback parameter which controls the amount of the phazor's output that is fed back to its input.

Note that if the phazor pitch is set to a very low value, the results can be unpredictable. Try the "Crazy Phazor" sound (Bank A, Number 80).

There are two parameters that control a phazor:

Pitch. The pitch parameter sets the delay time of the phazor. Here there are three modulations.

1.   100% of pitch means that the phazor pitch will track the note played so its effect is consistent.

2.   The base modulation is set to just under 12 semitones so it will affect mostly he first harmonic.

3.   Envelope 2 is used to sweep the pitch of the phazor over time so the phazor resonances interact with the spectrum of the pulsor.
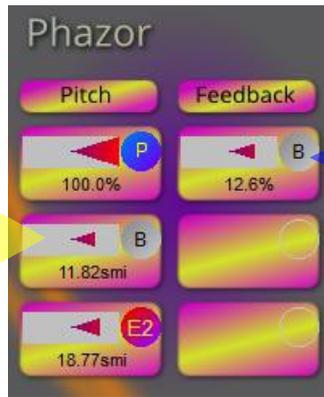
Feedback. This parameter affects how much the phazor resonates or rings.

Low feedback values have a subtle effect and high feedback values can be used to create radical ringing sounds.

Positive and negative feedback values also have quite different effects.

Experiment with different pitch modulations and positive and negative feedback values.

Mixing Pulsor & Phazor Outputs

The pulsors (and format) outputs are mixed together and the result passed through the phazor. They are also mixed with the output of the phazor. The mixer section allows the phazor output to be either added to or subtracted from the pulsor (and formant) outputs.

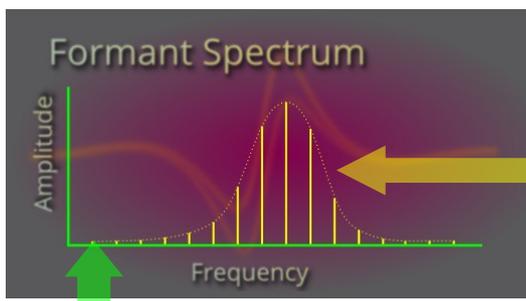Phazor subtracted from pulsor at this mixer setting.
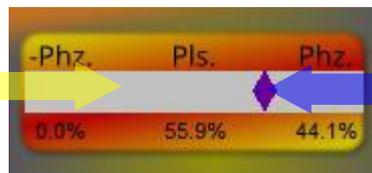
Phazor added to pulsor at this mixer setting.

Try the two settings – they will sound subtly different. Notice that you will not hear a difference between maximum positive and maximum negative settings as here only the phazor output is heard.

The Formant Generator

The formant generator selects a narrow band of the harmonic spectrum similar to those that give sung vowels their distinctive sound. To help find out how the *formant generator* behaves, load the "Formant Demo" sound (Bank A, Number 126) and play a few notes or listen to the demo sequence.

There are four characteristics which describe a formant. These are the fundamental frequency (*base pitch*), the center frequency of the band (*formant pitch*), the width of the band (*bandwidth*)and the *amplitude* of the formant.

The yellow lines show the harmonic spectrum of a formant.

This consists of a number of the higher harmonics in a narrow band.

Here the bandwidth is about three harmonics.

Formant fundamental or base frequency (base pitch).

Formant Pitch & Amplitude

The *formant pitch* and *amplitude* are controlled by the *Formant* section.

Pitch. The *pitch* parameter sets the center frequency of the formant.

Here, this is set to track the note pitch but 30 semitones or 2.5 octaves above. This places it between the 5th and 6th harmonics.

In the "formant demo" sound it is set to be swept up and down by L.F.O.1 giving a distinctive "waaooaaw" sound.


Amplitude. The amplitude parameter simply controls the level of the formant generator's output.

Typically, as here, it will be modulated by an envelope.

Try controlling the formant pitch with an envelope. This can give an effect similar to a traditional 'analogue' synthesizer. This is used in the "Anna Log" sound (Bank A, Number 38).

Base Pitch & Bandwidth

The formant *base pitch* and *bandwidth* are actually controlled by *Pulsor 1*.

Pitch. The *pitch* parameter sets the base pitch of the formant.

Here, it is simply set to track the note pitch
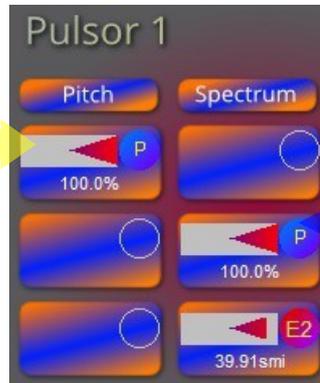
Spectrum. The *spectrum* parameter controls the bandwidth of the formant. The higher the value for the spectrum parameter, the broader the bandwidth.

In the "formant demo" sound this is controlled by envelope 2. It decays from a broad band, (sounding like a pulsor) to a narrow band where the formant sound is very pronounced.

In the "Formant Demo" sound (Bank A, Number 126), the output of the *pulsor* is turned off. Try turning it on be setting the top modulator source to envelope 1. This allows you to add some lower harmonics to the sound.

4. Controlling And Modifying The Sound

The Envelope Generators

Envelope Output

The envelope generators are conventional A.D.S.R. types. If you are familiar with standard synthesizer envelope generators, you will not need to read this section.

Attack. This sets the time the envelope takes to reach its maximum value.

Ident. The ident is used by the modulators to indicate that the source is envelope 1 or envelope 2.

Release. This sets the time the envelope takes to die away once the note is released. The release is exponential so the time is approximate.

Decay. This sets the time the envelope takes to reach the sustain level. The decay is exponential so the time displayed is approximate.

Sustain. This is the level (as a percentage of maximum) at which the envelope will sit at while the note is held.

Pulsor Syncing

If *Envelope 1's* attack time is set to less than 20ms then the pulsor waveforms are reset to the start of their cycles whenever a new note is started. This allows for sharper attacks for percussive, piano or plucked type sounds.

This feature is only applied to envelope 1 so if you want a sharp attack it is recommended that you use envelope 1 for pulsor and formant amplitudes.

The L.F.O.s

The low frequency oscillators or L.F.O.s are fairly standard in operation. If you are familiar with standard synthesizer L.F.O.s, you will not have any difficulty understanding them.

Speed. Sets the L.F.O.'s speed.

The numerical value given is actually the time of the L.F.O.s period.

Ident. The ident is used by modulators to indicate that the source is L.F.O. 1 or L.F.O. 2.

Shape. This drop-down sets the shape of the L.F.O. waveform. The available waveforms are detailed below.

Fade In. The L.F.O.'s effect can be set to 'fade in' over a short time to mimic the way some instruments are played.

Mode. This is short for *Sync Mode*. This drop-down is used to set how the L.F.O. waveform is synchronized to the notes played. The synchronization modes are detailed below.

L.F.O. Waveform Shapes

Sine.		The L.F.O. waveform is a sine wave
Square.		The L.F.O. waveform is a square wave.
Ramp.		The L.F.O. waveform is a rising ramp wave. Setting the modulation amount to a negative value will give the same effect as a falling ramp wave.
Samp Hold.		The sample hold waveform consists of a new, randomly generated level every L.F.O. period.
Wander.		The "wander" waveform is a semi-random continuous waveform which wanders about in a similar manner to the pitch of a sung note.

Synchronization Modes

In the explanations below we are considering a situation where there are two notes played and held for a polyphonic sound. To simplify the explanation, we are only considering one L.F.O. for each voice. The top, yellow, graph shows the L.F.O. ramp waveform for the first note played and the bottom, green, graph shows the L.F.O. ramp waveform for the second note played. The red triangles show the points in time when the notes are started.
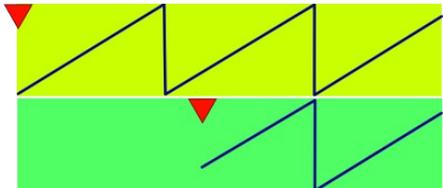
Master

In <u>master</u> mode, the L.F.O.s for all the notes are synchronized to a free running master.
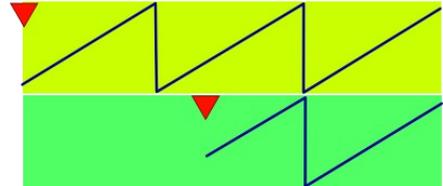
Sync. To First

In <u>sync to first</u> mode, when the first note that is played, the L.F.O. re-starts its waveform. The L.F.O.s for the second (and all subsequent) notes added to the chord are synchronized to the L.F.O. of the first note played.
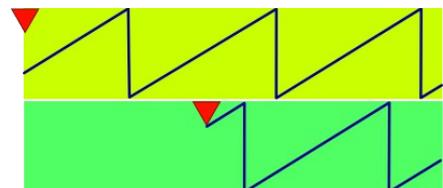
Sync. To Note

In <u>sync to note</u> mode, the L.F.O. of each note starts its waveform when the note is played. The L.F.O.s for all notes can, as a result, be out of phase depending on the timing of the notes played.
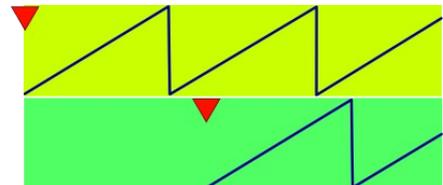
Random

In random mode every L.F.O. is set to a random phase value and this phase value is unaffected by the notes being played.

The Mixer

The mixer section actually does two quite separate mixing jobs. These are both controlled by cross-faders.

Pan ⮀ Chorus. This sets the mix between the stereo output from the auto-pan effect and the stereo output from the chorus effect.

The auto-pan and the chorus effects are both described in the effects section which follows.

Pulsors ⮀ Phazor. This control sets the mix between the output of the pulsors and the output of the phazor.

Exactly how this is done is described below.

The output of the pulsors (and the formant) are mixed together and fed into the phazor. The pulsor ⮀ phazor cross-fader then mixes the output of the phazor with the output of the pulsors (and the formant).

Notice that the pulsor outputs can be mixed with the phazor outputs "Phz." or the phazor outputs inverted "-Phz.". This creates a subtly different sound – load the "Phazor Demo" sound (Bank A, Program 127) and try it.

The Effects

The Pulsor has three effects modules carefully chosen to specifically enhance its sounds. The effects have been designed to match **The Pulsor** sound engine and not to duplicate VST plug-in effects that you probably already own.

To try out the effects, load the "Effects Demo" sound (Bank A, Program 125) as a starting point.

Auto-Pan

The *auto-pan* effect takes the mono output from the pulsors ⮀ phazor mix and places it in the stereo field.

It has two modulators, allowing the pan position to be controlled from any two of the modulation sources. Here L.F.O. 1 is moving the output across about ¾ of the stereo field.

Experiment with other modulation sources.

Chorus

The Pulsor chorus effect uses a unique <u>triple</u> chorus algorithm for enhanced depth and richness. The chorus module has two simple controls:

- **Speed.** This sets the speed at which the chorusing effect sweeps.
- **Depth.** The controls the depth of the chorus effect sweep.

High settings of both speed and depth can create an out of tune effect. If this is not desirable reduce either of these settings.

Mangler

The mangler is so called because it 'mangles' the spectrum of the sound. This causes coloration in certain frequency bands which adds character to the sound in the same way that an instrument body characterizes the sound of the instrument.

The Pulsor gives you a choice of twenty different types of mangler called, un-poetically, "Type 1" to "Type 20". There is no way to describe the effect of a particular mangler on the sound so you will just have to experiment until you find one that enhances your sound.
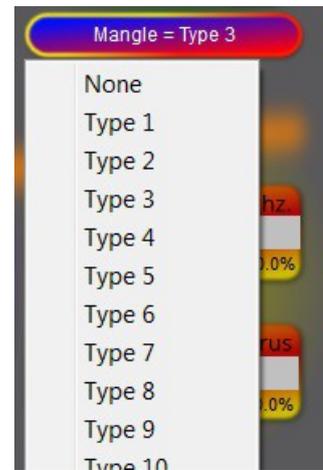
The Keyboard Controller

The Pulsor, like most VST plug-ins, is designed to be controlled mostly from a MIDI keyboard. The *Keyboard* section controls the MIDI keyboard's interaction with *The Pulsor*.

The keyboard module is responsible for the following:

- It triggers the envelopes when a key is pressed on the keyboard.
- It synchronizes any L.F.O.s that are set to <u>sync to note</u> mode.
- It generates two modulation outputs which are **pitch** and key **velocity**.

The **Mod.** output indicates the color code for the MIDI output from the modulation wheel. This is explained in the MIDI Control section, below.

Modulator Outputs. These are not in fact controls. They are there to indicate the color coding of the modulation outputs from the keyboard controller.

Porta. This is short for "portamento" and controls the time it takes for the note pitch to glide between the currently sounding note and a newly selected note.

This is dependent on the current performance mode. This is explained below.

Performance Mode. This drop-down allows the current performance mode to be set. This is explained below.

Bend Range. This drop-down allows the pitch bend range to be set in semitones.

Detune. This allows **The Pulsor** to be de-tuned, up to a semitone, relative to the other instruments in the song. This can give a richer, more natural, sound.

Transpose. This drop-down allows the whole if *The Pulsor* to be transposed from two octaves down (-24) to two octaves up (+24).

Performance Modes

The keyboard controller has four performance modes (labeled "Mode" in the drop-down). These are:

- **Poly.** Short for "polyphonic". Here, every note has it's own voice (like a piano) so any number of notes can be played at once. Note that in polyphonic mode, there is no portamento. For example the "Pianno" sound (Bank A, Program 3).

- **Mono.** Short for "monophonic". Here only one note sounds as a time, which is the last key pressed. Portamento is always applied to the pitch of the new note. For example the "Synth Lead" sound (Bank A, Program 4).

- **Auto glide.** This mode is also monophonic but it is modified so that you can play your sound more like a monophonic instrument such as a woodwind or brass instrument.

  - When the first key is pressed, the note is started normally, that is, the envelopes are triggered. There is no portamento to the pitch of the new note.
  - If any further keys are pressed, the envelopes are not re-triggered. Now, portamento is active so the voice pitch glides to the pitch of the new note.

  An example of a sound using auto-glide mode is the "Brassy" sound (Bank A, Program 27).

- **Multi.** This mode is also monophonic but modified so that you can jump between notes very quickly.

  - When the first key is pressed – a note will be started normally.
  - If a second key is pressed, then the voice will play that note normally.
 - Now, if either of these keys is released, the other note will be re-triggered.

  Portamento is applied to every new note pitch. An example of a sound using multi mode is the lead "Multi-lead" sound (Bank A, Program 74).

MIDI Control

Every value parameter can be set up to be controlled from an external MIDI controller. This feature is intended to be used when using **The Pulsor** as a stand alone instrument played from a controller keyboard. When using **The Pulsor** with a DAW, it is far better to use the DAW's built in automation capabilities to control the Pulsor.

Any of five MIDI control sources can be assigned to control any of the value parameters. These are the Modulation Wheel and four general purpose MIDI controls called "MIDI Cont 1" to "MIDI Cont 4". Each of these general purpose MIDI controls can be assigned to any actual MIDI controller number. In addition, the range of the value parameter which each MIDI control effects can be set to be 100%, 50% or 20% of the parameter's range.

To change the MIDI control for a parameter, right click on its Value Bar and a drop down will appear, like the one in the picture. This allows you to select the required MIDI control source and range for the parameter. The current selection is shown checked – in the picture 100% MIDI Control 1.
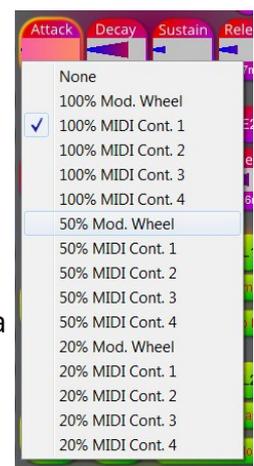
The color of the value bar indicates MIDI controller source and it will be the same color as the corresponding MIDI Control Select button. These are explained below. The color for the "Mod. Wheel" MIDI control is shown in the Keyboard section, labeled "Mod".

To check the range of the MIDI control, for a parameter, you must right click on the value bar to display the drop-down.

MIDI Control Select Buttons

One MIDI control is permanently assigned to the modulation wheel. The other four, however, can be assigned to any MIDI controller number.

The MIDI Cont. select buttons, shown in the picture, indicate which MIDI control they are and the MIDI controller number to which they are currently assigned. For instance, here, MIDI Cont. 2 is assigned to MIDI controller number 17.

Any parameter that is being controlled by this a specific MIDI Cont. will have the color of its value bar set to the same color as the MIDI Cont. button.

The procedure to assign a controller number to a MIDI Cont. is simple. First click on the MIDI Cont select button you wish to assign – it will now be shown as active. Now move the physical control you wish to assign to this MIDI Cont. **The Pulsor** will detect the MIDI controller number output from the physical control. The MIDI Cont. controller number will now be automatically updated and the select button will become inactive.

If, after clicking the MIDI Cont select button you change your mind and don't want to change the selection, simply click on the button again and it will become inactive.

An example of a sound using MIDI controller input is the "Clari-flute" sound (Bank A, Program 58) which uses the mod wheel to simulate a wind player blowing harder and softer.

5. Program Control & Sound Selection

The Pulsor stores 256 sounds arranged in two banks of 128 programs each. Bank 'A' contains the supplied sounds and this bank cannot be overwritten. Bank 'B' initially contains the same sounds as bank 'A' but these can be overwritten with your own sounds. The various parts that make up the *Program* section are explained below:

Bank. This is:
A. Fixed as supplied.
B. User editable.

Click here to select a new sound.

Program. The program number within the bank, 1 – 128. A ***** after this number indicates that the sound has been edited.

Click here to select a new sound.

Name. The name of the sound.

Click here to edit the sound's name.

Load. Click this button to load a sound from an external source.

This is detailed below.

Demo. Listen to a short demo sequence of the current sound.

This demo will be musically relevant to the sound.

Save. Click this button to save a sound to a specific destination.

Saving is explained below.

Auto Demo. Here the demo sequence is looped and this button toggles it on and off.

Changing the sound will automatically switch the demo sequence to the one for the new sound.

Program Up / Down. These buttons allow you to select the next or last sound with one click.

This is useful for quickly listening to a number of sounds.

How Sounds Are Stored

While it is running, **The Pulsor** uses two sets of sounds:

1. The <u>stored</u> set can only be accessed from the *Program* section of **The Pulsor**. Bank 'A' cannot be changed and Bank 'B' can only be changed by specifically storing the sound to a program as described below.

2. Every time you assign **The Pulsor** to a track in your DAW, **The Pulsor** creates a <u>working</u> set of sounds. If you edit or automate a sound within a track, it is this working set of sounds that is modified and any changes made will be saved with your song.

Saving Sounds

If you click on the S*ave* button, a drop-down menu will appear giving you three possible locations to which you can store the current working sound:

• **Store to Program.** The current working sound is stored to the current program location. This option has no effect if the sound has not been edited. This option is not available for sounds in bank 'A'.

• **Save To File.** Selecting this option will cause a standard file save dialog to be displayed. Choose a directory and name for the file and click *Save*. Sounds are saved in a custom **Pulsor** program format "*.ppp".

• **Copy To Clipboard.** The current working sound is copied to the clipboard. This allows a copy of a sound to be saved in a different location where it can be used as the basis for a new sound.

Loading Sounds

To load a sound from a program in bank 'A' or bank 'B' click on either the bank or program parts of the program display. A drop-down menu will appear allowing you to select the sound you want. The sound is loaded from the stored set to the working set.

If you click on the *Load* button, a drop-down menu will appear giving you two possible external locations from which to load a sound to the current program in the working set:

• **Load From File.** Selecting this option will cause a standard file open dialog to be displayed. Choose file you wish to load and click open to load it. Sounds are saved in a custom **Pulsor** program format "*.ppp"

• **Load From Clipboard.** This option is only available is you have previously saved a sound to the clipboard (see the previous section). If you select this option, the sound stored in the clipboard is copied to the current program in the working set.