Tau Pro user manual





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1. Foreword

Thank you for choosing the Tau Pro virtual instrument plug-in. To get the best from your software, we recommend that you read this manual carefully and keep a copy in a safe place for future reference.

Should you experience problems operating this product and can't find the answers in this manual, please email service@muon-software.com or visit the Muon Software internet forum at http://www.muon-software.com/html/support.html

Don't forget, when contacting technical support, to describe the problem in as much detail as possible, and provide details of your system configuration (operating system, host program, CPU, RAM, etc.).

2. Compatibility

The Tau Pro virtual instrument has been tested with a wide variety of Audio Unit and VST2compatible host programs. However, host programs vary in their specifications and some may not implement features in the AU or VST2 specifications that Tau Pro relies upon. If you are worried about compatibility issues please contact technical support using the email address above.

3. Minimum System Requirements

- Windows, Windows XP/Vista, 1ghz+ processor, 512mb RAM
- Mac OS-X 10.4 or better, G4 1ghz+ / any G5 / any Intel processor, 512mb RAM
- VST2.3, VST2.4 or Audio Unit plug-in compatible host software

You can find a list of Audio Unit or VST2.x plug-in compatible host software at www.kvraudio.com, the internet's best resource for information about audio plug-ins and hosts.

4. Introduction – What does Tau Pro do?

Tau Pro is a complex synthesiser, combining elements of classic analogue modules with some new and innovative features. Tau Pro gets its fantastic sound from Muon's advanced 64-bit Analogue Modelling technology, and adds the kind of hands on control that you need to take your music to new heights.

Since Tau Pro is now VST2.4, Universal Binary and Audio Unit compatible you will be able to use this software in all the latest hosts.

5. Front Panel Basics

Tau Pro has only one main editor screen, shown below:-



On this editor screen you will see numerous controls, grouped into sections that allow you to edit the various settings and use features of the software.

There are four basic types of controls used throughout Tau Pro's user interface:-

Rotary controls (knobs)	To change the value of a rotary control, click on it, hold the mouse button down and drag vertically, horizontally or in a circular motion (depending on the knob mode selected). Whenever you click on a control that does not have an associated numeric display, a small pop-up box will display the exact value you are changing (when parameter displays are enabled) To set a control to its default value, hold down the CTRL key on your keyboard when clicking, and to increase the mouse resolution hold down SHIFT when dragging.
Buttons	The waveform, mix and FX selector button in Tau Pro's user interface have multiple states. To cycle forward through the button's states simply click on the button To cycle backwards through the states, right-click (Command-click on Mac) on the button. There are also two buttons in the top right that toggle parameter displays and the current knob mode.
Switches	The retrig switch has two positions, on and off. To toggle the switch state simply click on it. The filter selector has three states. To change states click and drag with the mouse.
Pop-up menus	Controls that have additional features also have a pop-up menu. Right-click (Command-click on Mac) on the control to display the menu of choices, and then click in the menu to select your desired option.

Tau Pro can also be controlled entirely from an external MIDI controller, providing that controller is capable of sending MIDI Continuous Controller (CC) messages. A special MIDI "learn" mode is provided to quickly build up your own MIDI CC mappings.

Simply right-click (Command-click on Mac) on any control to display a menu of the current MIDI CC settings. Choose "link to next CC" from the menu to put a control into "learn" mode. Once a control is in "learn" mode, it will automatically link itself to the next CC message that it receives.

Note that MIDI controller functionality may differ from host program to host program. Some sequencers, for example, intercept and do not pass MIDI controller messages in their entirety to loaded plug-ins (FL Studio, Logic Audio for example). You should refer to your sequencer's user manual for more information if you are not sure.

Section Summary

- Tau Pro has only one editor screen
- The buttons in the top right toggle user interface features such as knob mode (circular/linear) and parameter displays (on/off)
- CTRL-clicking most controls will reset them to their default value
- Holding down shift while dragging a control will give you greater precision
- Many of Tau Pro's controls can be automated over MIDI by right-clicking on them

6. Tau Pro parameters

The controls on the main editor screen of Tau Pro flow roughly left to right and are grouped into distinct sections as follows.

6.1. The Oscillator Section

Each of Tau Pro's Virtual Computerised Oscillators (VCO for short) produces a single sound waveform, and these are mixed together in the Mixer section (next) to make the basic sound of the synth.



The oscillator section

You can adjust the individual oscillators so that the pitch they play is up to 12 semitones higher or lower (using the transpose control) than the note the synth receives over MIDI. The fine pitch (detune) can be adjusted for each oscillator also. Setting the detune on different oscillators to different amounts will produce a wide, swirling effect as the oscillators "beat" against each other - this is great for big, fat patches. You can also set the volume of each oscillator using the level control.

The final output volume of both oscillators, and consequently the whole patch, is set using the master volume control. See the section on master controls for more detail later on in this manual.

You can choose the waveform generated by each oscillator by clicking the Mode button. There are eleven built-in waveforms, five sawtooth, five rectangular and sine wave. The first sawtooth and square waves (SAW1 and SQU1) are as you'd expect from a standard synthesiser, as is the sine wave. The other four saw and four square waves have additional harmonics added in increasing proportion for extra bite.

All waveforms in Tau Pro can be modulated in real time using the PWM Depth and Rate controls. On a traditional synth pulse-width typically only refers to the square wave - this is true in Muon synths such as the Electron and Atom Pro even. However, in Tau Pro, all waves can be modulated in this way. The Depth Control is used to set the strength of the effect, and the Rate control sets the speed of the sweep. The actual audible effect is that of different groups of harmonics sweeping and swirling, like a complex filter or sound shaper. This is great in lead sounds, filter sweeps and trancey basslines.

6.2. The Oscillator Mixer Section

The output of Tau Pro's oscillators can be combined in three different ways using the Mix mode button. The first mode "OFF" simply enables the balance knob to control the amount of each oscillator that goes to the output (fully left=VCO1 only, fully right=VCO2 only, middle=both).



If the Mix Mode is set to Sync the shape of the VCO1's wave output is retriggered whenever VCO2 starts its cycle over. This causes a distortion that you can vary by changing the transpose and detune settings for VCO1 - however the pitch will not change. If VCO1 is syncing you can change its pitch by changing the pitch of VCO2. Note though that it is in the nature of the oscillator sync in general that things can get a bit unstable towards the top of the keyboard!

Ring Modulation (MIX Mode=RING) means that the output of VCO2 is multiplied (amplitude modulated) with the output of VCO1. The strength of the ring modulation is controlled by the balance knob (fully left=no effect, fully right=max). Ring modulation is great for hard, biting timbres and atonal, metallic noises.

6.3. The Articulation Section



The Articulation Section

Tau Pro has a powerful VCF and envelope section (Virtual Computerised Filter), capable of warping the sound of the oscillators beyond all recognition. This is where the majority of the work in creating a patch is done!

The VCF is a resonant lowpass design, which means that it removes brighter harmonics but lets the lower frequencies through. The filter has three possible response settings - 18, 24 or 36 dB per octave. These settings control how strong the filter is, with 18dB being the weakest. In all cases, the Cut off knob controls where in the frequency range the filter begins to act.

The Q control is used to add a boost to the frequencies immediately around the cut off point. Setting this control to 100% will cause the filter to turn into an oscillator, which can be used to great effect (though watch out for the levels - Tau Pro can easily distort the input of your sequencer's mixer at high Q).

The EG Mod and EG Decay knobs govern how the synth automatically opens and closes the filter. The EG Mod control sets how strong the opening and closing of the filter is, and the EG decay determines how long this takes. Long decay times and high EG mod settings create biting, deep sweeps. Shorter decay times and high EG mod settings give a "plucked" effect. Experimentation is the key here!

Along with the Cutoff and Q controls, these are the primary way to create moving, dynamic sounds in Tau Pro. Don't forget that you can often get the best effects by turning the controls whilst your riff is playing – and you can normally record the changes too into your sequencer. This is everything you need for driving, pulsating basslines and riffs!

The Accent Threshold and Accent Level knobs control another important way in which Tau Pro's sound can be made more dynamic. Quite often with many keyboards hitting the key harder results in a brighter sound - the Muon Electron has this feature. However, the style of classic synth theTau Pro is based on originally had a 16-step sequencer rather than a keyboard, where it was possible to add an "accent" to certain notes to make them brighter and louder. Tau Pro simulates this by using the Accent controls - set the threshold to just above your normal playing velocity. If you hit a key harder than normal, Tau Pro will open the filter a bit more, the exact amount is determined by the Accent Level knob.

The final control in this section is the Drive knob. This overloads the input stage of Tau Pro's amplifier, much like you might do with an analogue tape deck, recording desk or electric guitar to get a warm, fuzzed-out overdrive. Use the drive knob to get warm, full sounds with a searing edge of distortion

6.4. The Master Section



At the bottom of Tau Pro is a small 16-note virtual keyboard (from B1 to D3). The keys do not send MIDI messages, but respond to mouse clicks if you wish to quickly audition a sound.

When Tau Pro receives an incoming MIDI Note On or Off messages the keys will animate too – if you have a MIDI or Audio problem this can help determine whether or not signals are getting into Tau Pro and that sound is getting out.

The remaining three controls in the section are the Master Volume, Glide Time and Retrig selectors. The Master Volume control determines the final output level of Tau Pro before the sound is sent to the sequencer.

The Glide knob is used to activate Tau Pro's fingered legato mode. When the red light next to the knob is one, pressing down one key and then "slurring" to another note will cause the pitch to bend from the first to the second. The Glide Time knob controls the speed of this pitch bend. These kind of pitch slides require a certain playing technique, but you can force particular notes to overlap and therefore glide easily enough in your sequencer's editor.

When gliding, Tau Pro's envelope is not retriggered. This means that if you have a short decay time the second note will sound "dull", and the EnvMod control will have no effect. This is perfect for smoothly slurring notes from one to the other, but is not so perfect for "ordinary" bass sounds. If you want the envelope to open each time a Note On message is received, flick the Retrig switch to the right. If Glide mode was previously activated (as indicated by a glowing red LED) you will now see that it is shut down when retrig is on.

6.5. The FX Processor



The FX Processor

Tau Pro also contains a comprehensive stereo multi FX unit packed with creative possibilities. The basic effect program is selected using the FX Mode button, and then tuned to taste with the knobs to the right.

Available FX programs are as follows:

- OFF Dry sound only
- CHR1 Warm Stereo Chorus
- CHR2 Wide Stereo Chorus
- FLG1 Warm Stereo Flange
- FLG2Wide Stereo Flange
- DLY1 Vintage delay
- DLY2 Clean delay
- C + D Mono chorus feeding into vintage delay
- **F** + **D** Mono flange feeding into vintage delay

In the Chorus and Flange modes the LFO Rate and LFO depth knobs determine the speed of the sweep and its depth. The Feedback control adds a ringing, watery edge to the flange and makes the chorus richer. Feedback can be both negative (fully left) and positive (fully right) or off completely (centre). Switching off feedback or using negative feedback can increase the clarity and "tightness" off the effect. The Delay Time control has no purpose in Chorus and Flange effect patches.

When a Delay patch is selected, the LFO Rate and LFO Depth controls have no purpose. The Feedback control determines how much regeneration there is after each echo - high settings will cause the echoes to die away very slowly. Negative feedback has the same effect as positive feedback but the repeats can sometimes sit in a track better as they become inverted and do not interfere so much with the main signal.

The final two patches are combined, and thus use all the available controls. However, in the combined modes the Wet Mix control determines only the amount of echo - the mono chorus/flange part of the effect is fixed.

Section Summary

- Tau Pro has two oscillators that can be set to a range of waveforms
- All oscillator waveforms can be dynamically modulated with the LFOs
- The oscillator can glide from note to note as you play legato phrases
- The oscillator outputs can sync or ring modulate each other
- The filter is controlled by a single attack/decay envelope
- There are three filter types
- The FX Processor has eight presets to choose from
- The accent feature is activated by playing harder

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