

cre8audio™



# WEST PEST!

## *USER GUIDE* v1.0

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# Thank You!

Thank you for purchasing the Cre8audio West Pest. Your investment in our ideas help support innovative synthesizer design!

Good analog sounds better. Good analog adds a dimension to a sound that can be felt as much as heard, but good analog does not have to be complex. A single analog oscillator full of depth and character passing through a west coast style wavefolder can be all it takes to get you there. The West Pest is a direct path to that sound.

I love the West Pest for how immediate it is and how it welcomes both new and veteran artists to modular analog synthesis with a sense of humor and without pretense. Please use this synthesizer as a launch pad for experimentation and fun in the search for your sound because that's exactly what we at Pittsburgh, and our friends at Cre8audio designed it for.

Analog is important,  
Richard Nicol  
Founder | Product Designer  
Pittsburgh Modular Synthesizers



# 1.1 Important Power Information

## Read Instructions:

Please read the Cre8audio West Pest Synthesizer User Guide completely before use and retain for future reference.



- Only use the DC power adapter provided by Cre8audio with the West Pest. Using an incorrect power adapter can cause permanent damage to the West Pest and the power adapter.
- The West Pest is an electronic device. Exposure to water will cause the West Pest circuitry to short circuit and may cause permanent damage.
- Do not attempt to modify the West Pest. Tampering with the circuitry may cause permanent damage.
- Do not place heavy objects on the West Pest. The user interface is mounted on a PCB that can be damaged if stressed by excessive weight.
- Do not attempt to repair the West Pest. Please contact Cre8audio regarding malfunctions of any kind.
- Cre8audio is not responsible for any damage or loss caused by improper use of the West Pest.
- Do not taunt the West Pest.

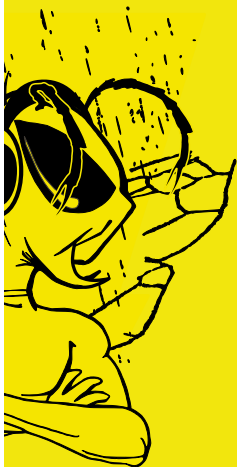
## IMPORTANT Eurorack Ribbon Cable Power Information:

The Cre8audio West Pest Synthesizer is a Eurorack format synthesizer module. The module can be installed, rearranged, removed, and replaced in any compatible Eurorack case from Cre8audio, Pittsburgh Modular, or other manufacturers.

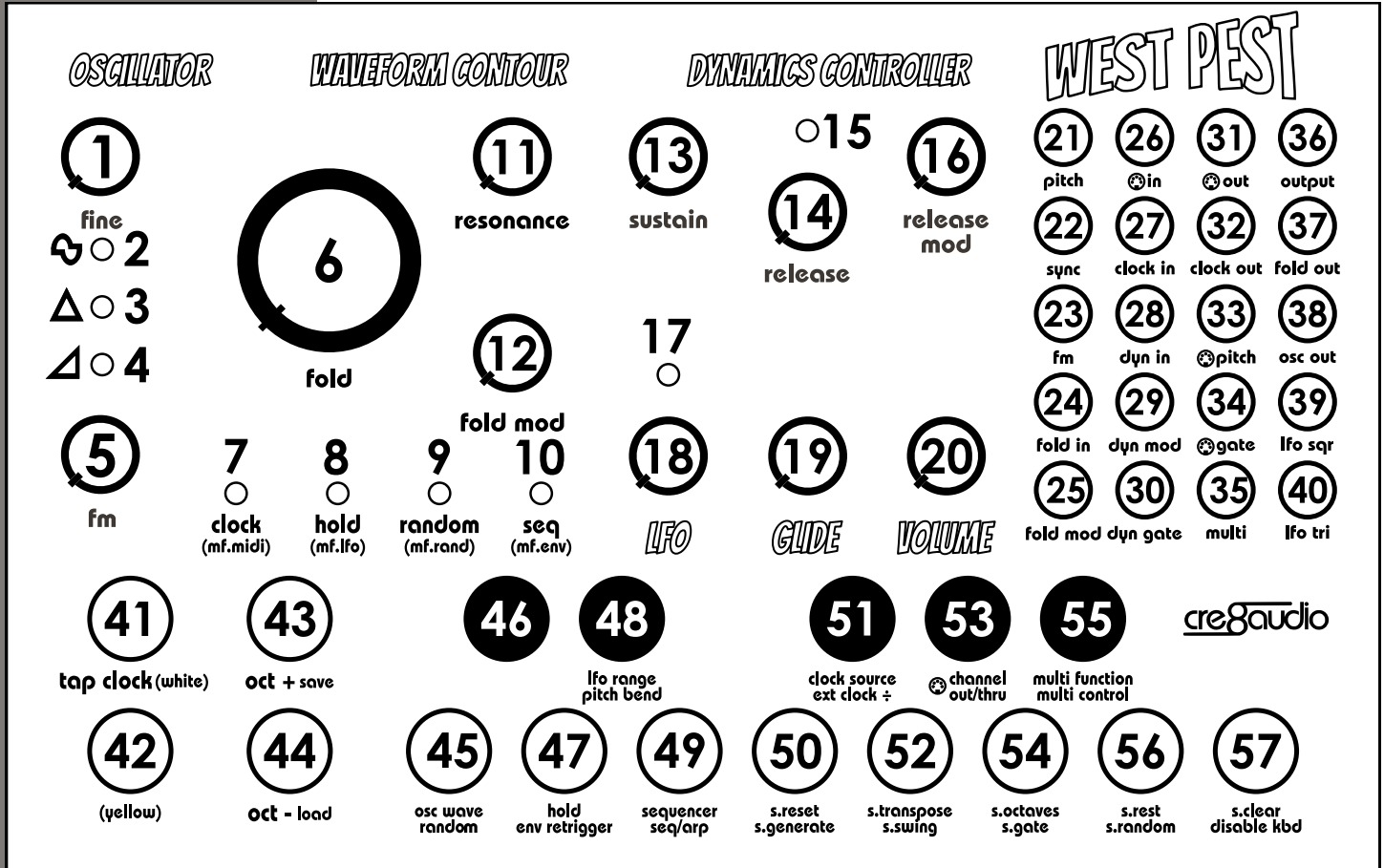
The Cre8audio West Pest Synthesizer uses a standard 16 pin Eurorack ribbon cable to connect the module to a bipolar +/-12v power supply. Please pay very close attention to the orientation of the ribbon cable when adding and removing modules. The stripe on the ribbon cable marks -12 volt power. This stripe needs to line up with the -12 volt pins on the power supply and the -12 volt pins on the module. The Cre8audio West Pest Synthesizer includes reverse polarity protection so it will not be damaged when plugged in incorrectly; however, as a general rule, failure to match up the pins correctly can result in damage to one or all the modules in a case. On Cre8audio and Pittsburgh Modular cases the positive and negative voltages are clearly labeled. On the Cre8audio West Pest Synthesizer module, the power header is clearly labeled and keyed to ensure a safe and proper connection.

Do NOT remove the Cre8audio West Pest Synthesizer module from any case while it is plugged in.

Do NOT unplug power ribbon cables from the Cre8audio West Pest Synthesizer or case while the case is plugged in.



## 2 User Interface



- Osc. Fine Tune Knob
- Osc. Sine LED
- Osc. Triangle LED
- Osc. Saw LED
- Osc. FM Knob
- Contour Fold Knob
- Display Clock LED
- Display Hold LED
- Display Random LED
- Display Sequence LED
- Dynamics Resonance Knob
- Contour Fold Mod In Knob
- Dynamics Sustain Knob
- Dynamics Release Knob
- Dynamics Status LED
- Dynamics Release Mod In Knob
- LFO LED
- LFO Rate Knob
- Osc. Pitch Glide Knob
- Volume Knob
- Osc. Pitch In Jack
- Osc. Sync In Jack
- Osc. FM In Jack
- Contour Fold In Jack
- Contour Fold Mod In Jack
- MIDI In Jack
- Dynamics In Jack
- Dynamics Mod In Jack
- Dynamics Gate In Jack
- Midi Out Jack
- Clock Out Jack
- MIDI Pitch Out Jack
- MIDI Gate Out Jack
- Multi-Tool Out Jack
- Main Output Jack
- Contour Fold Out Jack
- Oscillator Out Jack
- LFO Square Out Jack
- LFO Triangle Out Jack
- Tap Clock (white) Button
- Edit (yellow) Button
- Octave Up Button
- Octave Down Button
- C1 Note Button
- C# Note Button
- D Note Button
- D# Note Button
- E Note Button
- F Note Button
- F# Note Button
- G Note Button
- G# Note Button
- A Note Button
- A# Note Button
- B Note Button
- C2 Note Button



# 3 West Pest Overview

## 3.1 Overview:

The Cre8audio West Pest Synthesizer combines the functionality of 5 individual modular synthesizer modules behind a single panel. Connect different functions using patch cables to create complex sounds and textures.

The West Pest signal path is divided into two types of signals: audio signals and control voltages. The audio signal is the sound that is produced. The audio signal path starts at an oscillator or other sound source. The audio signal is then patched through other functions used to shape the sound such a wavefolder or dynamics controller.

Control voltages (CV) manipulate the audio signal in several different ways. Gates are represented by a high (5 volts) or low (0 volts) control voltage. A gate can be generated using a pulse or square wave from an oscillator or modulation source, or by using the MIDI gate or clock output. A gate can be shaped using the Envelope to control the attack, decay, sustain, and release of the gate. The modified gate signal can then be sent to any Modulation CV input on the West Pest.

A second use for control voltages is as a modulation source. For example, a control voltage from the MIDI pitch output patched into the Contour Fold Mod input on the Waveform Contour module controls the fold intensity of the wave based on the midi note received. The LFO provides a separate low frequency oscillator that makes a perfect control voltage modulation source. Audio rate modulation signals also make a great CV source for oscillator FM (frequency modulation).

**Any output can be patched into any input. Some patching may not result in musical or interesting results but experimentation with the patch points is always encouraged.**

## 3.2 Panel Labeling Conventions:

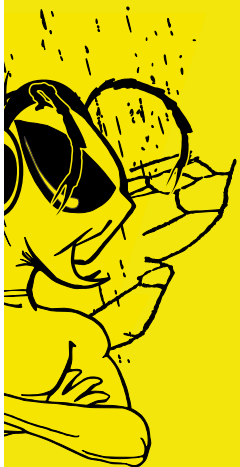
The Cre8audio West Pest uses several simple labeling conventions to make the user interface and signal flow easy to understand.

- Each main function is contained within a white outline.
- Input jacks are labeled with blue.
- Output jacks are labeled with white.
- **Yellow** functions are accessed by holding down the **[Edit (Yellow) Button]**.
- **White** functions are accessed by holding down the **[Tap Clock (White) Button]**.

## 3.3 Manual Labeling Conventions:

Within the manual, user interface buttons, knobs, and jacks are in bold and marked with brackets **[ ]**. For example, **[Clock LED]** refers the the LED labeled clock in the display section.

The West Pest uses a simple 4-bit display to visualized selected modes. The 4-bit display is shown in the manual with a graphic showing a set of 4 LED status indicators. ● represents a lit LED. ○ represents an unlit led.



# 3 West Pest Overview

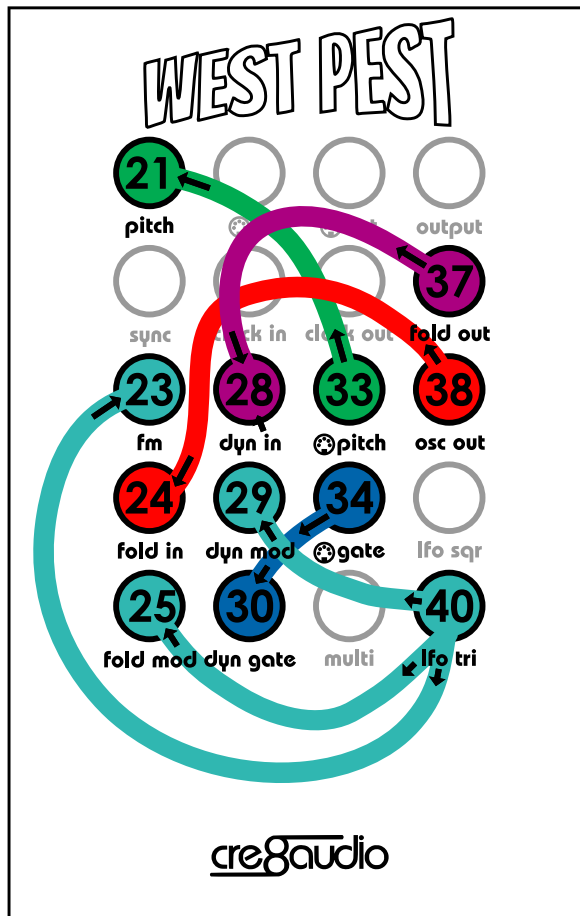
## 3.4 Internal Patching:

The West Pest utilizes internal patching to create a single oscillator synth voice that does not require patch cables to play. To modify the internal patch or to create something completely new, all of the internal routing can be bypassed using patch cables. This allows total patching freedom without the constraints of a fixed voice architecture.

**Plugging a patch cable into an internally patched input jack will override any internal patching.** Most internal connections are made using switched jacks. A switched jack allows the internal signal path to be disabled when a patch cable is inserted. A simple example would be the pitch input of the oscillator. Internally, the pitch output of the midi section is wired to the switched jack input of the oscillator. When a patch cable is plugged into the pitch input of the oscillator, that patch cable breaks the connection to the midi pitch output and replaces it with the signal from the inserted patch cable.

## 3.5 Internal Patching Diagram:

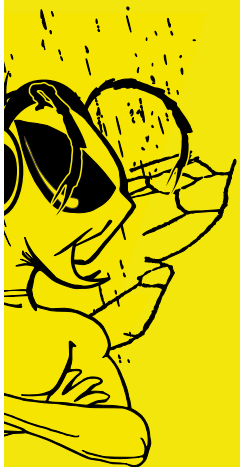
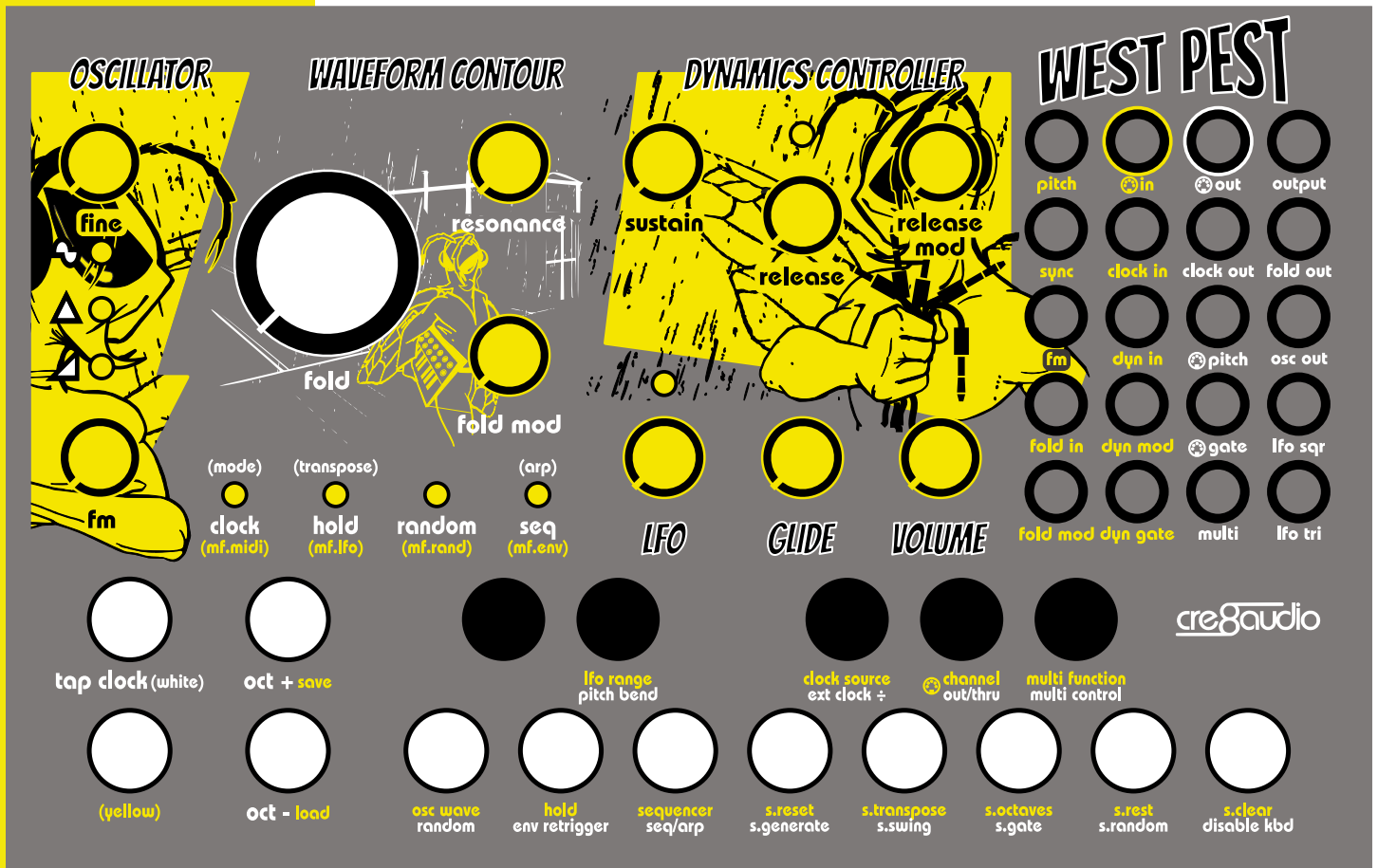
The diagram below shows the pre-patched audio and CV signals. Each signal is patched with a unique color for clarity.



# 4 Individual Modules

## 4.1 Panel Layout:

The West Pest can be organized into 5 independent Modules. Oscillator, wave contour, dynamics controller, LFO, and button keyboard. Each module controls one or more functions and can operate on its own or can be patched into any other module within the West Pest or other Eurorack format modules.



# 5 Oscillator Module

## 5.1 Oscillator Overview:

The Oscillator is a wide range, fully analog, VCA saw core waveform generator designed by Pittsburgh Modular. Linear frequency modulation (FM) ranging from subtle to extreme is available using the **[Osc. FM In Jack]** and **[Osc. FM Knob]**. Linear FM modulation the frequency of the oscillator equally in both positive and negative directions. This allows for a larger range of frequency modulation before losing pitch tracking. Custom internal wave shaping provides a selection of three geometric waveforms (sine, triangle, and saw) along with pitched noise. Select a waveform using **[Yellow Edit Mode : Note Button C1]**. Select a random waveform for each note using **[White Edit Mode : Note Button C1]**.

Combination waves are available that mix two waveforms to create different shapes. Please note, these waveforms have a larger amplitude than the individual waveforms and can sound louder than individual waveforms. Pitched noise is generated by randomly switching between the three geometric waveforms rapidly. A perfect choice for percussive sounds.

## 5.2 Oscillator Controls, Inputs, and Outputs:

**[Osc. Fine Tune Knob]** - Fine tune frequency control. Used to tune the oscillator to a precise frequency with a range of +/- 1.5 semitones.

**[Osc. Pitch In Jack]** - One volt per octave pitch tracking input. Used to control the pitch of the oscillator with a keyboard controller, sequencer, or other calibrated voltage source.

**[Osc. Pitch Glide Knob]** - Portamento control creates smooth transitions between notes. Turning the knob to the right increases the length of time it takes to glide from one note to another.

**[Osc. FM In Jack]** - Linear FM input jack used for frequency modulation.

**[Osc. FM Knob]** - FM input level control sets the amount of signal allowed to pass from the FM input to the oscillator core.

**[Waveform LEDs]** - LEDs show the currently selected waveform(s). Sine, triangle, saw.

**[Osc. Out Jack]** - Outputs selected waveform(s).

OSCILLATOR



fine



fm



GLIDE



pitch



sync



fm



osc out





# 6 Waveform Contour

## 6.1 Waveform Contour Overview:

A traditional east coast style synth would use a filter to shape and remove harmonics from a waveform. This is called subtractive synthesis; where harmonic information is being removed from the source wave. West Pest begins by doing the opposite. The waveform contour section utilizes a wave folder to add additional harmonics to the selected waveform by amplifying and folding the waveform back in on itself. Additive synthesis is one of the cornerstones of west coast synthesis. Complex and unique sounds can be dynamically created.

The **[Contour Fold Knob]** controls the strength of the wave folder. Turning the knob to the right increases the depth and number of folds up to a maximum of 6 folds. The density and depth of the folds has a strong affect on the shape and sound of the selected wave. When using the **[Contour Fold Mod In Jack]** and **[Contour Fold Mod In Knob]** the **[Contour Fold Knob]** acts as the starting point for the external modulation control.

## 6.2 Waveform Contour Controls, Inputs, and Outputs:

**[Contour Fold Knob]** - Sets the depth of the wavefolder.

**[Contour Fold Mod In Jack]** - Wavefolder modulation CV input jack.

**[Contour Fold Mod In Knob]** - Wavefolder CV input level attenuator.

**[Contour Fold In Jack]** - Waveform Contour audio input jack

**[Contour Fold Out Jack]** - Waveform contour audio output jack

### WAVEFORM CONTOUR



fold



fold mod



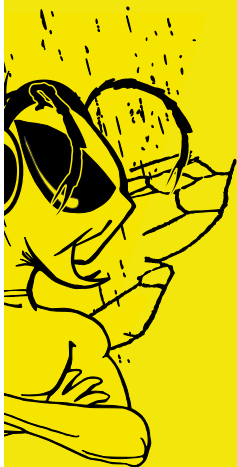
fold in



fold mod



fold out



# 7 Dynamics Controller Module

## 7.1 Dynamics Controller Overview:

The Dynamics Controller plays a large part in shaping the output of the West Pest by utilizing a unique processing circuit that adds dimension to the sound.

The Dynamics Controller is a modern interpretation of Don Buchla's famous "lopass" gate. The lowpass gate circuit is unique in the way that it simulates the characteristics of the natural world. Louder sounds contain more harmonic content and quieter sounds contain less harmonic content. There is no reason that synthesizers need to simulate the real world but because of how it affects the harmonic content of sound, a lowpass gate sounds more organic or natural compared to a standard VCA.

The original lowpass gate was limited to a static response time that varied from unit to unit. This made each lowpass gate a little different. The Dynamics Controller in the West Pest expands on the original Don Buchla concept by adding a unique, **[Dynamics Release Knob]** allowing for customizable gate response times. The dynamics response time can be voltage controlled using the **[Dynamics Mod In Jack]** and **[Dynamics Release Mod In Knob]**. The West Pest uses the sharp attack and variable release of the Dynamics Controller to create a percussive sound with a natural decay.

## 7.2 Dynamics Controller Controls, Inputs, and Outputs:

**[Dynamics Sustain Knob]** - Sets the level of sustain while the incoming gate signal is active.

**[Dynamics Release Knob]** - Decay time control. Sets the amount of time needed for the dynamics controller output level to decay. The **[Dynamics Release Knob]** functions differently than a traditional east coast style envelope release. The release curve is triggered by the rise of the incoming gate signal and not the fall. This creates the unique percussive response of the West Pest.

**[Dynamics Release Mod In Knob]** - Release CV input level attenuator.

**[Dynamics Resonance Knob]** - Another unique feature of the dynamics controller, this knob sets the resonance level of the dynamics controller.

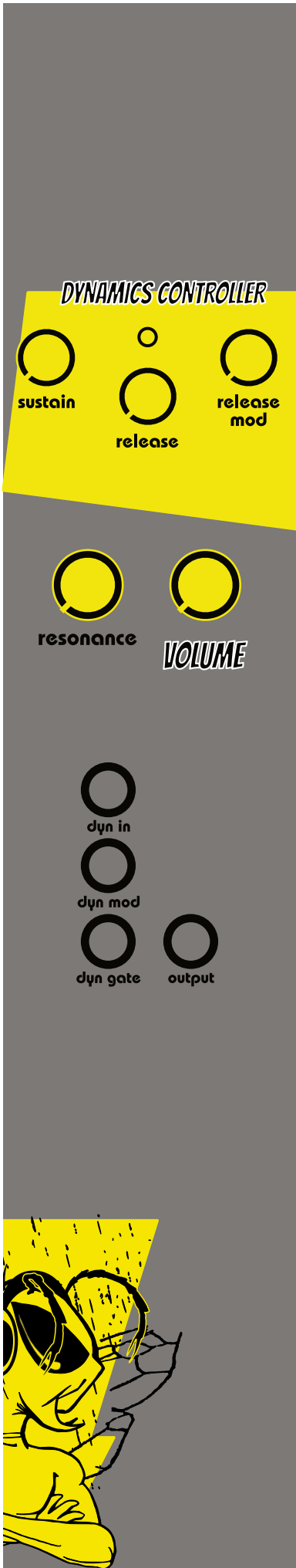
**[Volume Knob]** - Sets the overall output volume of the West Pest.

**[Dynamics In Jack]** - Audio input jack

**[Dynamics Mod In Jack]** - Dynamics release modulation input jack

**[Dynamics Gate In Jack]** - Gate input jack

**[Main Output Jack]** - West Pest audio output.



# 8 LFO Module

## 8.1 LFO Overview:

The LFO module is a dual range, low frequency oscillator with a +/- 5 volt triangle wave output. Perfect for long sweeps or audio rate frequency modulation. Select between high and low range using [Yellow Edit Mode : Note Button D#].

## 8.2 LFO Ranges:

High: 2 Hz to 500 Hz

Low: 41 seconds to 5 Hz

## 8.3 LFO Controls and Outputs:

[LFO Rate Knob] - Coarse frequency control. Used to set the speed of the LFO.

[LFO Square Out Jack] - Square wave output.

[LFO Triangle Out Jack] - Square wave output.



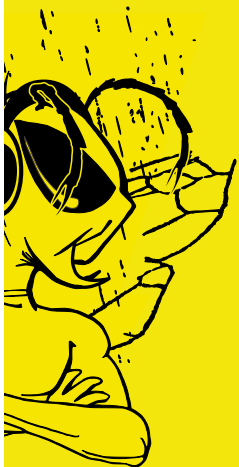
LFO



lfo sqr



lfo tri



# 9 Controller

## 9.1 Controller Overview:

The button controller built into the West Pest is much more than just a one octave keyboard. It includes a MIDI to CV converter, tap tempo clock source, octave shifting, a 32 step sequencer and arpeggiator with pattern saving, and a multi-function modulation tool with a clock sync'd lfo, decay envelope, and random voltage generator.

## 9.2 4-bit Display:

While modifying controller settings, most selections are visualized using the 4-bit display. This display is made up of 4 LEDs. Clock, hold, random, and sequence. The display shows relevant information when an edit mode selection has been made. After a few seconds, the display returns the LEDs to their main function. The 4-bit display is shown in the manual with a graphic showing a set of 4 LED status indicators. ● represents a lit LED. ○ represents an unlit led.

# IMPORTANT!!!

## 9.3 Edit Mode 1 and Edit Mode 2:

Each key on the controller has 2 additional edit functions, a (Yellow) function and a (White) function. Accessing these additional functions is simple. To access the (Yellow) function, press and hold [Edit (Yellow) Button] to enable Yellow Edit Mode options then press the desired function button. To access the (White) function, press and hold [Tap Clock (White) Button] to enable White Edit Mode options then press the desired function button.

## 9.4 MIDI to CV:

Ten octave MIDI to CV converter translates midi notes 0-119 into analog 0-10 volt, 1 volt per octave pitch information. Adjustable settings include pitch bend range, envelope retrigger, gate hold, and MIDI out or thru.

### MIDI Channel:

MIDI channel can be set using [Yellow Edit Mode : Note Button G#]. Press once to check current channel. Press again to advance through channels 1-16 and omni. 4-bit display shows active MIDI channel in 4 bit binary! 4-bit display blinks for omni.

### Pitch Bend Range:

Pitch Bend Range can be set using [White Edit Mode : Note Button D#]. Press once to check current setting. Press again to advance through the options.

- 2 Semitones 4-bit display: ● ● ○ ○
- 5 Semitones 4-bit display: ● ● ● ○
- 7 Semitones 4-bit display: ● ○ ● ●
- 12 Semitones (octave) 4-bit display: ● ○ ○ ●



# 9 Controller (continued)

## 9.4 MIDI to CV (continued):

### Envelope Retrigger:

Envelope Retrigger can be set using **[White Edit Mode : Note Button D]**. With envelope retrigger enabled, the MIDI to CV converter generates a gate for each new MIDI Note On message regardless if a note is currently being held. When disabled, a gate is generated only when there are no active notes.

- Enabled 4-bit display: ● ○ ● ●
- Disabled 4-bit display: ● ● ● ○

### Gate Hold:

Gate Hold can be set using **[Yellow Edit Mode : Note Button D]**. When Hold is enabled, the MIDI to CV converter ignores note off messages and keeps the gate high (5 volts). This is a great way to create drones and soundscapes. **[Display Hold LED]** is lit when gate hold is enabled.

### MIDI Out / Thru Mode:

MIDI Out or Thru Mode can be assigned to the **[MIDI Out Jack]** using **[White Edit Mode : Note Button G#]**. When MIDI out mode is selected, onboard button keyboard, sequencer, and internal tap tempo clock output to **[MIDI OUT JACK]**. No **[MIDI In Jack]** information is sent to **[MIDI JACK]** in MIDI Out is mode. When MIDI thru is selected, only **[MIDI In Jack]** information is passed to the **[MIDI OUT JACK]**.

- MIDI Out 4-bit display: ● ● ● ○
- MIDI Thru 4-bit display: ● ○ ● ●

## 9.5 Clock:

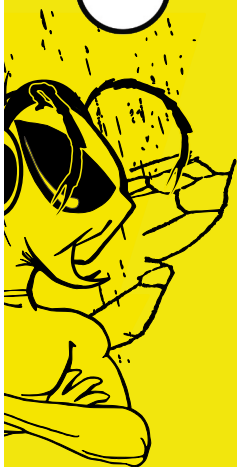
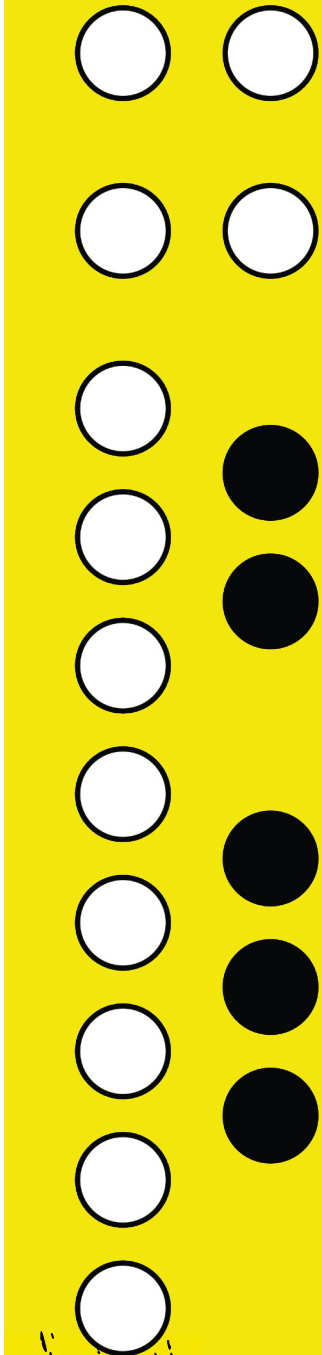
Clock is used for sequencer / arpeggiator timing. When the sequencer / arpeggiator is active, the clock is sent to the **[Clock Out Jack]** as 10ms triggers. The **[MIDI Out Jack]** sends MIDI clock regardless of the sequencer / arpeggiator status but outputs MIDI clock start and stop messages when the sequencer / arpeggiator is turned on or off.

### Clock Source:

The clock source can be internal tap-tempo, external MIDI, external gate, or an internal random clock. Internal tempo is set by tapping the **[Tap Clock (blue) Button]**. Tap-tempo is determined based on the timing of the most recent 2 or 3 taps. The tap-tempo counter resets after 3 seconds without a tap tempo button press. Internal random clock is based on the tap-tempo but randomly adds or subtracts up to 90% of the clock rate per step. The random clock is very sloppy and will not sync properly with anything.

Clock source can be set using **[Yellow Edit Mode : Note Button F#]**. Press once to check current setting. Press again to advance through the clock options.

- Internal Tap-Tempo Clock 4-bit display: ● ● ○ ○
- External MIDI Clock 4-bit display: ● ● ● ○
- External Gate Clock 4-bit display: ● ○ ● ●
- Internal Random Clock 4-bit display: ● ○ ○ ●



# 9 Controller (continued)

## 9.5 Clock (continued):

### External Clock Divider:

The external clock divider allows the West Pest to run a division of the external MIDI or external gate clock. An external clock source must be selected to modify the external clock division.

External clock division can be set using **[White Edit Mode : Note Button F#]**. Press once to check current setting. Press again to advance through the clock divider options.

- ÷1 4-bit display: ●●○○
- ÷2 4-bit display: ●●●●
- ÷3 4-bit display: ●○○●
- ÷4 4-bit display: ●○○○

## 9.5 Keyboard Controller:

The integrated one octave keyboard controller is used to play the West Pest, program the sequencer / arpeggiator, and modify settings within the instrument. The keyboard consists of octave up and octave down buttons, a 13 key C to C piano style keyboard, tap tempo, and edit buttons. Using the **[Octave Up Button]** and **[Octave Down Button]**, the keyboard has a 9 octave range outputting MIDI notes 0-107. Analog pitch is sent to the **[MIDI Pitch Out Jack]** and the analog gate is sent to the **[MIDI Gate Out Jack]**. If the **[MIDI Out Jack]** is in MIDI out Mode, MIDI note on and note off information is sent to the **[MIDI Out Jack]**.

## 9.6 Sequencer and Arpeggiator:

West Pest includes an easy to use 32 step sequencer / arpeggiator. The only difference between the sequencer and arpeggiator mode is how notes are added to the pattern. A sequence can be started in sequencer mode and finished in arpeggiator mode or vice versa.

### Enable Sequencer / Arpeggiator Mode:

Turn on the sequencer / arpeggiator using **[Yellow Edit Mode : Note Button E]**. If sequencer mode is enabled, the **[Display Sequence LED]** will turn on solid. If arpeggiator mode is enabled, the **[Display Sequence LED]** will blink. If a note pattern is in memory, it will begin playing from the first step as soon as the sequencer / arpeggiator is turned on and will stop immediately when it is turned off.

The **[Clock Out Jack]** outputs a clock signal **only** when the sequencer / arpeggiator is turned on.

### Switch Between Sequencer and Arpeggiator Modes:

Switch between sequencer and arpeggiator modes using **[White Edit Mode : Note Button E]**. If sequencer mode is enabled, the **[Display Sequence LED]** will turn on solid. If arpeggiator mode is enabled, the **[Display Sequence LED]** will blink. Sequencer / arpeggiator mode must be active to switch between the modes. Switching between sequencer and arpeggiator does not stop, reset, or clear the currently playing note pattern.



# 9 Controller (continued)

## 9.6 Sequencer and Arpeggiator (continued):

### Sequencer Mode Note Input:

Notes are added to a pattern by pressing a note button, receiving an external MIDI note, or a combination of the two. The note pattern will begin looping as soon as the first note is entered. A rest note can be added to the note pattern with **[Yellow Edit Mode : Note Button B]**. Clear a note pattern using **[Yellow Edit Mode : Note Button C2]**.

### Arpeggiator Mode Note Input:

Notes are added to a pattern in the order they are played by pressing and holding a series of note buttons or external MIDI notes. The note pattern will begin looping as soon as the first note is entered. The pattern will continue to loop and additional notes can be added to the pattern until a note button is unpressed or external MIDI note off message is received. Once a note button is unpressed or external MIDI note off message is received the pattern will immediately be cleared unless hold mode is active.

Switching to arpeggiator mode enables hold mode by default. Hold mode can be enabled / disabled using **[Yellow Edit Mode : Note Button D]**. If hold mode is active, when a note button is unpressed or external MIDI note off message is received the pattern will continue to loop until a new note button is pressed or external MIDI note on message is received. Once a new note button is pressed or external MIDI note on message is received the current pattern is immediately cleared and a new pattern is started using the new note button or external MIDI note. While hold mode is active, a note pattern can be cleared by disabling hold mode or using the note pattern clear function with **[Yellow Edit Mode : Note Button C2]**.

### Save / Load:

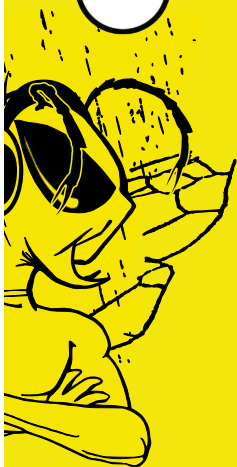
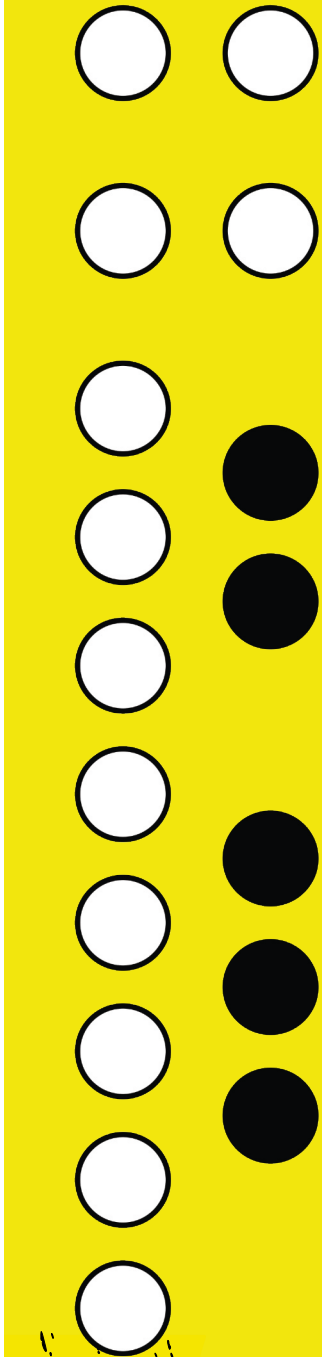
West Pest can save up to 13 note patterns. Patterns can be saved and loaded while sequencer / arpeggiator mode is active.

### Load a Pattern:

Press and hold **[Yellow Edit Mode : Octave Down Button]** and then press a **[Note Button C1-C2]**. The selected sequence will begin after the last step of the active sequence.

### Save a Pattern:

Press and hold **[Yellow Edit Mode : Octave Down Up]** and then press a **[Note Button C1-C2]**. The active sequence will be saved in this location.



# 9 Controller (continued)

## 9.6 Sequencer and Arpeggiator (continued):

### Swing:

Swing adds a natural feel to a rhythm by delaying every other note a small amount. Swing is applied to the active sequence / arpeggiator and **[Clock Out Jack]**. Swing can be set using **[Blue Edit Mode : Note Button G]**. Press once to check current setting. Press again to advance through the available options.

- 50% (off) 4-bit display: ●●○○
- 54.5% 4-bit display: ●●●○
- 59% 4-bit display: ●○●○
- 63% 4-bit display: ●○●●
- 67% 4-bit display: ●○○●
- 72% 4-bit display: ●●●●

### Gate Length:

Gate length sets the amount of time the **[MIDI Gate Out Jack]** remains high (5 volts). Gate length can be set using **[White Edit Mode : Note Button A]**. Press once to check current setting. Press again to advance through the available options.

- 10ms 4-bit display: ●●○○
- 30ms 4-bit display: ●●●○
- 40% of step length 4-bit display: ●○●○
- 70% of step length 4-bit display: ●○●●
- 90% of step length 4-bit display: ●○○●

### Transpose:

Enable the transpose function with **[Yellow Edit Mode : Note Button G]**. Transpose mode can only be enabled when the sequencer / arpeggiator is active. The transpose function allows a note button or incoming midi note to transpose the active arpeggiated sequence. The sequence is transposed based on the first note of the active note pattern. Use the **[Octave Up Button]** and **[Octave Down Button]**, to shift octaves.

- Enabled 4-bit display: ●●●○
- Disabled 4-bit display: ●○○●

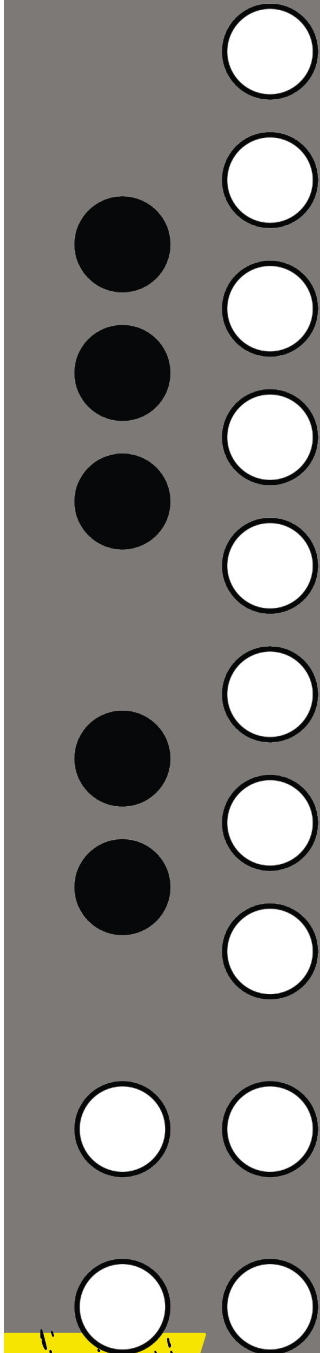
### Additional Octaves:

The range function sets the number of octaves the active note pattern will cycle through. The range can be set to 1, 2, or 3 octaves. Set the range by pressing **[Yellow Edit Mode : Note Button A]**. Press once to check current setting. Press again to advance through the available options.

- 0 additional octaves 4-bit display: ●●○○
- 1 additional octave 4-bit display: ●●●○
- 2 additional octaves 4-bit display: ●○●○

### As Played vs. Random Direction:

The sequencer / arpeggiator plays notes in the order they are added to the note pattern. This is called "as played". Random mode can only be enabled when the sequencer / arpeggiator is active. Randomize the active note pattern by pressing **[White Edit Mode : Note Button B]**. When active, the **[Display Random LED]** will turn on solid. The random function will randomly jump between the notes of the active note pattern.





# 9 Controller (continued)

## 9.6 Sequencer and Arpeggiator (continued):

### Random Note Pattern Generator:

Let's all pretend this is not confusing at all and makes sense when using it. Create a randomized note pattern (1-32 steps) with or without rests and pattern morphing. The random pattern generator can only be used when the sequencer / arpeggiator is active. Press **[White Edit Mode : Note Button F]** once to create a random pattern. Press again while the 4-bit display is blinking to create a random pattern with a 19% chance of a rest per note. Press a third time while the 4-bit display is blinking to enable pattern morphing with a 10% chance of note changes.

Once a pattern with rests is generated, pressing **[White Edit Mode : Note Button F]** will enable / disable pattern morphing without creating a new pattern. Pressing **[Yellow Edit Mode : Note Button C2]** will clear the pattern and disable pattern morphing.

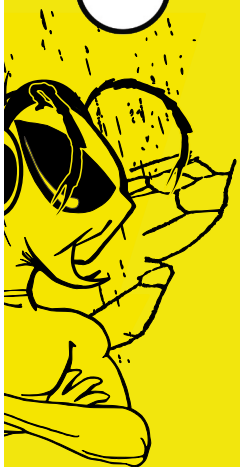
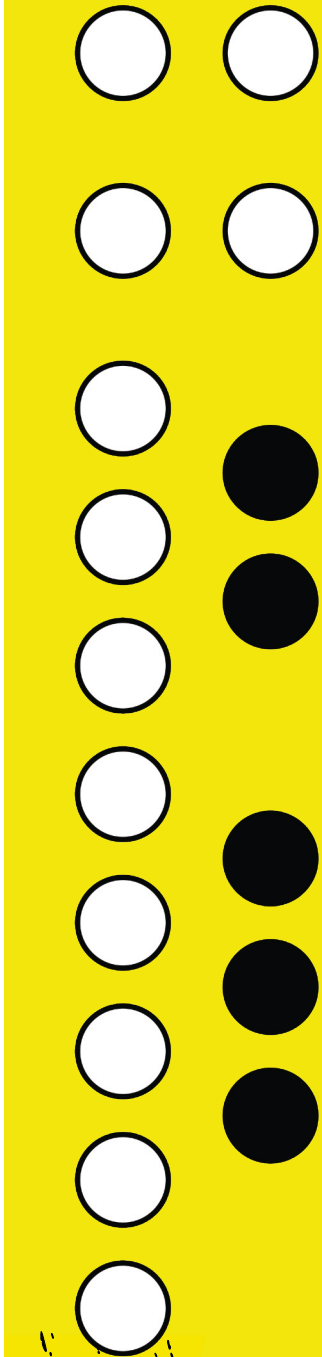
Pattern Generator 4-bit display:



Pattern Generator with Rests 4-bit display:



Pattern Morphing 4-bit display:



# 9 Controller (continued)

## 9.7 Multi-Function Modulation Generator:

The Multi-Function Tool is a digital voltage generator with four modes controls the **[Multi-Tool Out Jack]**. MIDI CC, triangle LFO, clock sync'd random voltage, or decay envelope. Press **[Yellow Edit Mode : Note Button A#]**. to cycle between modes. Press once to check current mode. Press again to advance through the available options.

- MIDI CC output 4-bit display: ● ○ ○ ○
- Triangle LFO 4-bit display: ○ ● ○ ○
- Random voltage 4-bit display: ○ ○ ● ○
- Decay envelope 4-bit display: ○ ○ ○ ●

### MIDI CC Output:

Outputs 0-5 volts based on the selected MIDI CC or modulation wheel. To set the active MIDI CC number, press and hold the **[Edit (yellow) Button]**. While the **[Edit (yellow) Button]** is pressed, the MIDI section assigns the active MIDI CC number based on the last incoming MIDI CC message it receives. Simply move a mod wheel or engage an input source on a MIDI controller to assign that MIDI CC number to the **[Multi-Tool Out Jack]**.

### Clock Sync'd LFO:

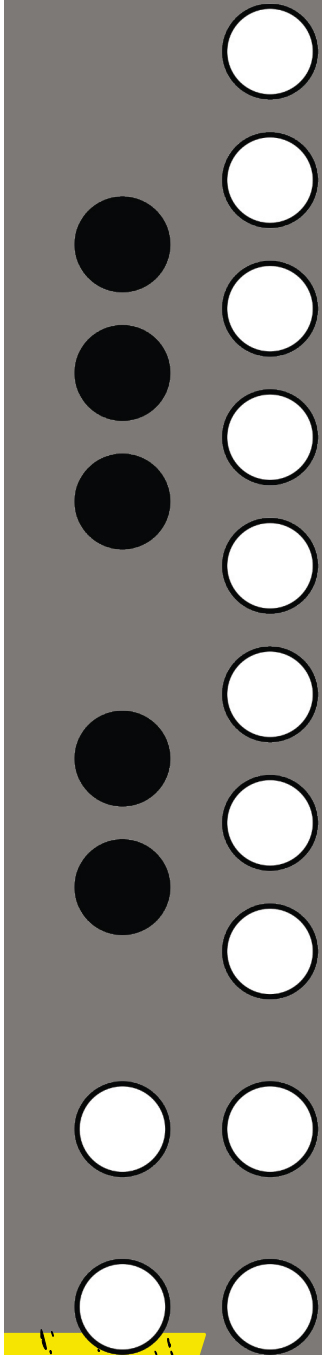
A 0-5 volt triangle wave LFO sync'd to the active clock source. Rate is based on a division or multiplication of the active clock source. Press **[White Edit Mode : Note Button A#]** to cycle through clock divisions.

- Divide Clock by 1 4-bit display: ● ● ● ●
- Multiply Clock by 2 4-bit display: ○ ● ○ ○
- Multiply Clock by 3 4-bit display: ○ ● ● ○
- Multiply Clock by 4 4-bit display: ○ ○ ● ○
- Divide Clock by 8 4-bit display: ● ○ ○ ○
- Divide Clock by 7 4-bit display: ● ● ○ ●
- Divide Clock by 6 4-bit display: ● ○ ○ ●
- Divide Clock by 5 4-bit display: ● ○ ● ●
- Divide Clock by 4 4-bit display: ● ○ ● ○
- Divide Clock by 3 4-bit display: ● ● ● ○
- Divide Clock by 2 4-bit display: ● ● ○ ○

### Random Voltage:

An unquantized 0-5 volt random voltage. Voltage changes are based on a division or multiplication of the active clock source. Press **[White Edit Mode : Note Button A#]** to cycle through clock divisions.

- Divide Clock by 1 4-bit display: ● ● ● ●
- Multiply Clock by 2 4-bit display: ○ ● ○ ○
- Multiply Clock by 3 4-bit display: ○ ● ● ○
- Multiply Clock by 4 4-bit display: ○ ○ ● ○
- Divide Clock by 4 4-bit display: ● ○ ● ○
- Divide Clock by 3 4-bit display: ● ● ● ○
- Divide Clock by 2 4-bit display: ● ● ○ ○



# 9 Controller (continued)

## 9.7 Multi-Function Modulation Generator (continued):

### Decay Envelope:

A 0-5 volt exponential decay envelope. Press [**White Edit Mode : Note Button A#**] to cycle through decay lengths.

60 ms 4-bit display:



120 ms 4-bit display:



240 ms 4-bit display:



480 ms 4-bit display:



1000 ms 4-bit display:



2000 ms 4-bit display:

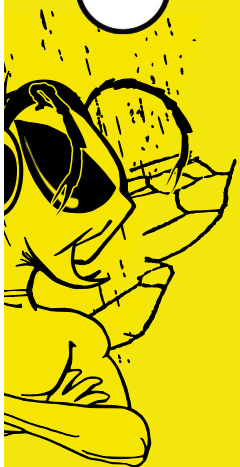
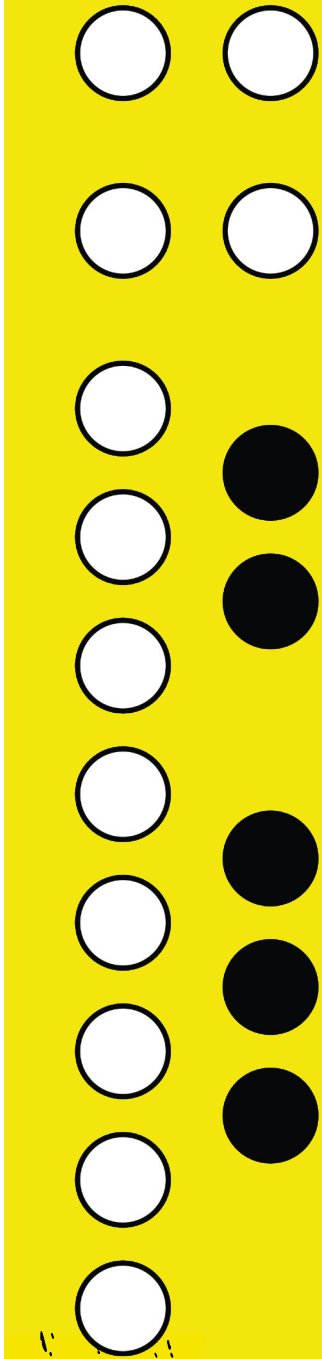


4000 ms 4-bit display:



## 9.8 Flip Keyboard and Green Functions

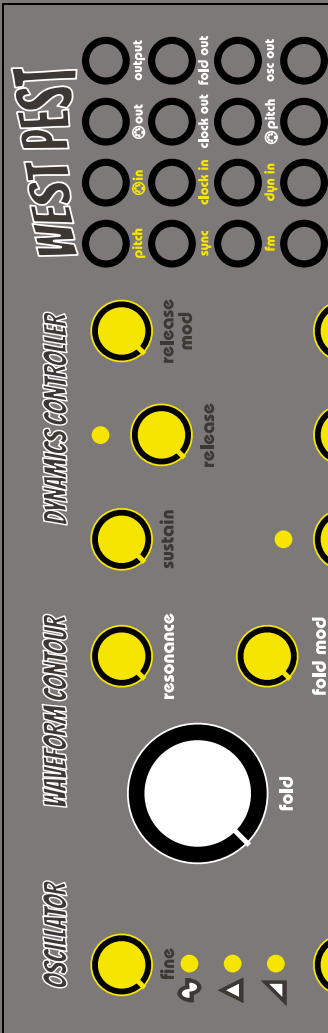
The default functionality of [**Note Button C1-C2**] can be set to [**Yellow Edit Mode**] functions instead of the default C1-C2 MIDI keyboard. Press [**Edit (white) Button : Note Button C2**] to switch to [**Yellow Edit Mode**]. When set to [**Yellow Edit Mode**] the default function of the button is flipped to the Green Edit Mode functionality. The MIDI keyboard is available by pressing and holding the [**Edit (yellow) Button**] and any note button.



# 10 Factory Reset

## 10.1 All Settings Factory Reset:

Press and hold [Octave Up Button : Octave Down Button : Note Button C2] for 5 seconds to reset all modes and functions to the default settings and erase all saved sequences. This action can not be undone.



# 11 Eurorack Specs

## 11.1 Eurorack Specs:

Panel size: 40hp.

Module depth: 25mm.

Power consumption: +12v 250 mA, -12v 190 mA. Does not require +5v. Reversed power polarity protection. Due to the complexity of this module, it requires a significant amount of power. Please use a clean, high quality power source for optimum performance.



# 12 More Information

## 12.1 Warranty:

Cre8audio warrants to the original purchaser that this unit is free of defects in materials and workmanship under normal use and maintenance for a period of one (1) year from the date of original purchase. The warranty applies only to registered Cre8audio users that register their Cre8audio Product(s) within fourteen (14) days of time of original purchase. To register Cre8audio Products, visit [Cre8audio.com](http://Cre8audio.com). If the unit fails within the one (1) year period, it will be repaired, or replaced, at Cre8audio's option, at no charge, when returned prepaid to the Cre8audio Technical Service Center with proof of purchase – the sales receipt may be used for this purpose. Installation labor is not covered under this warranty.

Cre8audio reserves the right to change the method by which Cre8audio may provide warranty service, and any Cre8audio Product's eligibility to receive a particular method of service. Service will be limited to the options available in the country where service is requested. Service options, parts availability and response times may vary according to country. The original purchaser will be responsible for all shipping and handling charges. Customers that seek service in a country that is not the country of purchase must comply with all applicable import and export laws and regulations and be responsible for all custom duties, V.A.T. and other associated taxes and charges. For international service, Cre8audio may repair or replace Cre8audio Products and parts with comparable Cre8audio Products and parts that comply with local standards.

All replacement parts, whether new or re-manufactured, assume as their warranty period for only the remaining time of this warranty. This warranty does not apply to damage caused by improper use, accident, abuse, improper voltage service, fire, flood, lightning, or other acts of God, or if the product was altered or repaired by anyone other than Cre8audio Technical Service Center. Consequential and incidental damages are not recoverable under this warranty.

Some regions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply. This warranty gives you specific legal rights, and you may also have other rights, which vary by state and country. No portion of this warranty may be copied or duplicated without the expressed written permission of Cre8audio. THIS WARRANTY IS NOT TRANSFERABLE.

## 12.2 Service and Contact Information:

Please contact us for service or other information related to the West Pest or any other Cre8audio product. <https://www.cre8audio.com/supportticket>

