

Shape LFO Editor

Operation Manual

Version 1.1.1



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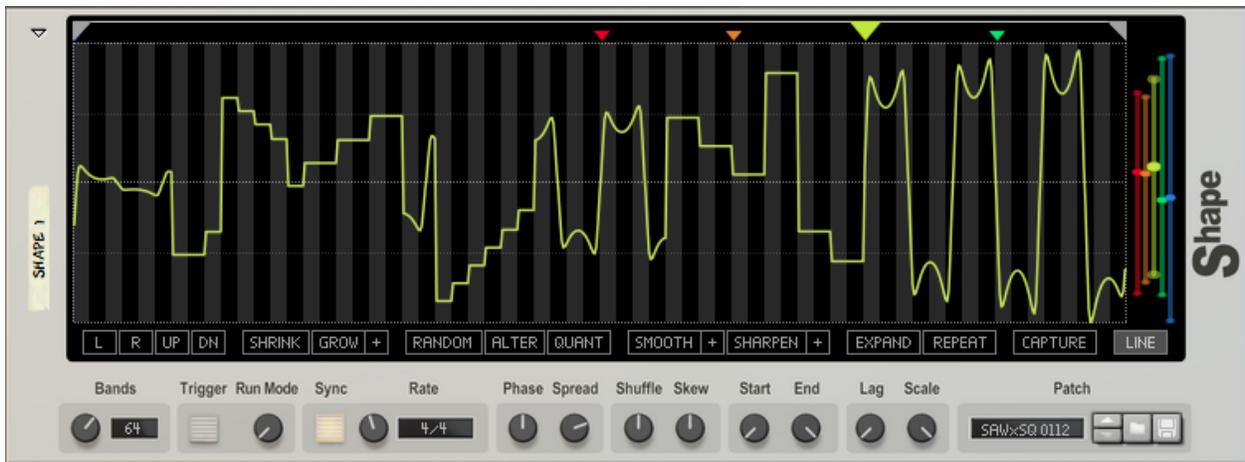
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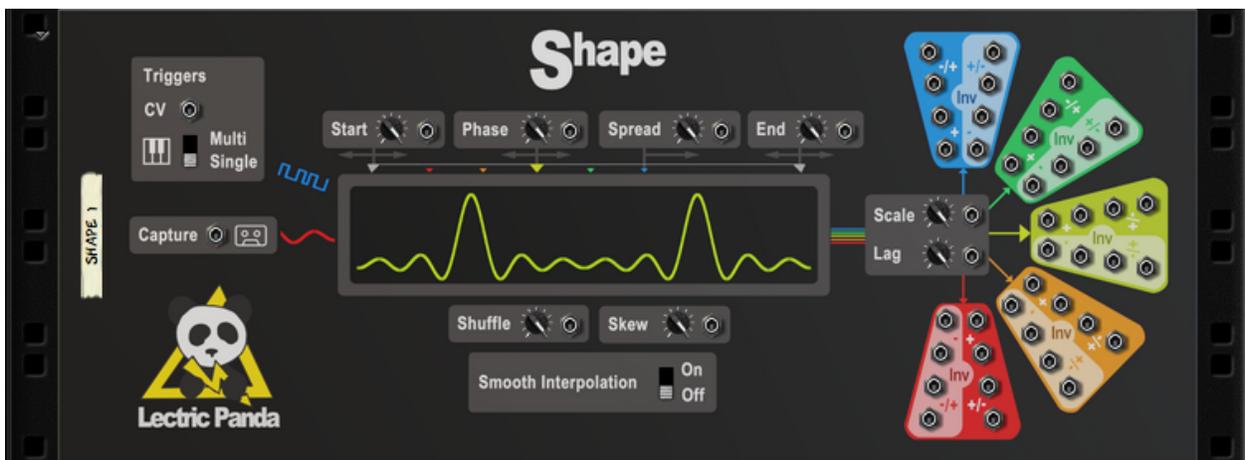
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Introduction

Shape is a freeform CV editor, looper, recorder, and envelope generator with a magnitude of modification and modulation possibilities. The device includes 5 synchronized playheads with an adjustable spread/offset between them. There are 3 run modes: always running, run when trigger down, and trigger one shot. The capture mode will temporarily turn the waveform display into a real-time oscilloscope while recording, then the captured waveform can be played, edited, and saved as a patch. Shape also comes with over 9000 preset waveform patches.

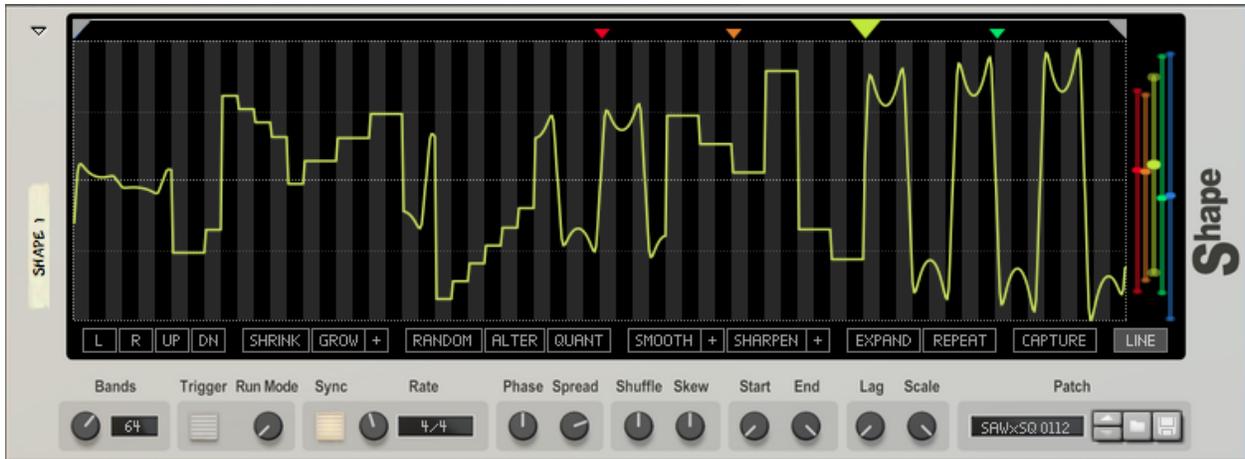


Front Panel



Back Panel

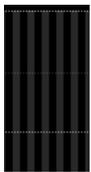
Front Panel



Bands

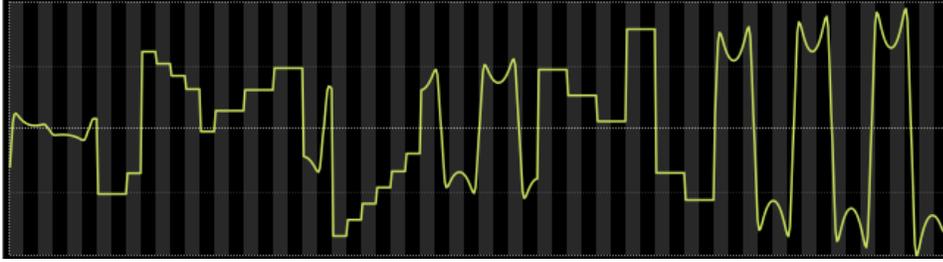


The main waveform display is divided up into segments via the **Bands** parameter. The tool functions and drawing snap to the band setting. This parameter is only for editing and has no effect on output. Available band levels are: 2, 4, 5, 8, 10, 16, 20, 32, 40, 64, 80, 128, 160, 320, and 640. The highest setting, 640, is a 1:1 pixel ratio to the waveform display.



Bands set to 128.

Waveform Display



The waveform display is the main area for editing the waveform. It is divided up into segments controlled by the **Bands** parameter. Clicking on a band sets the level for that band. Clicking and dragging allows you to set multiple bands in one stroke. Activating the **Line** button () in the **Tool** area allows a straight line to be created across the **Bands**.

Trigger & Run Mode



The **Trigger** button is a momentary push button that starts playback or resets the playhead to the start position, depending on the **Run Mode**.

Run Mode configures Shape's playhead behavior:

- **Always** mode runs the playhead continuously and **Trigger** resets the playhead to the start marker.
- **Trigger Down** holds the playhead at the start position until the **Trigger** is active. Playback stops once the **Trigger** is released.
- **Trigger One Shot** holds the playhead at the start position until the **Trigger** is active. The waveform plays once until the playhead reaches the end position.

Shape can also be triggered via CV through the back panel and MIDI notes through the sequencer.

Sync & Rate



The **Sync** and **Rate** parameters determine Shape's timing. The **Rate** selection depends on the tempo **Sync** state:

- **Sync Off** allows rates in cycles per second from 0.0 Hz (Stopped) to 50.0 Hz.
- **Sync On** synchronizes Shape to the tempo and transport of the song. The available rates are: 32/4, 28/4, 24/4, 20/4, 16/4, 12/4, 8/4, 7/4, 6/4, 5/4, 4/4, 7/8, 3/4, 5/8, 2/4, 3/8, 1/4, 3/16, 1/8, 1/8T, 1/16, 1/16T, 1/32, 1/64.

Play Positions, Start, and End Markers



The top bar of the display defines the start () and end () positions that the playheads loop over. The 5 synchronized playheads are color coded and correlate to the colored output sections on the back panel. The Yellow playhead () is the main playhead that **Phase** adjusts. The smaller side playheads are also affected by **Spread**. Red's () offset is $-2x$ **Spread**. Orange's () offset is $-1x$ **Spread**. Green's () offset is $+1x$ **Spread**. Blue's () offset is $+2x$ **Spread**.

The **Start** and **End** parameters can be adjusted by clicking in this area. Positions snap to the closest **Band**.

Start & End



Start sets the start cycle point. **End** sets the end cycle point. The playhead travels from start to end. If they are swapped, the waveform plays backwards.



Start position 20%, End Position 50%.

Phase & Spread



Phase adjusts the offset of the playheads from -360 to 360 degrees.

Spread adjusts the offset of the side playheads to the main playhead from -90 to 90 degrees.



Examples of Phase & Spread: (a) Phase 60, Spread 30 (b) Phase 180, Spread 30 (c) Phase 180, Spread 60 (d) Phase 180, Spread 90.

Output Visualization

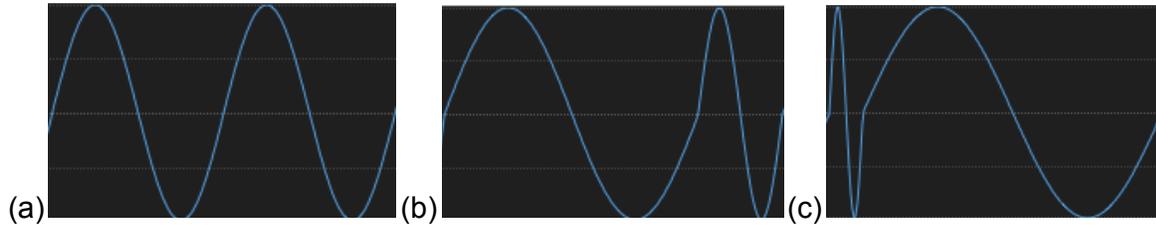


The visualization section shows the current CV output for each colored playhead and output group. The bars show the recent minimum and maximum values that were reached for each.

Shuffle & Skew

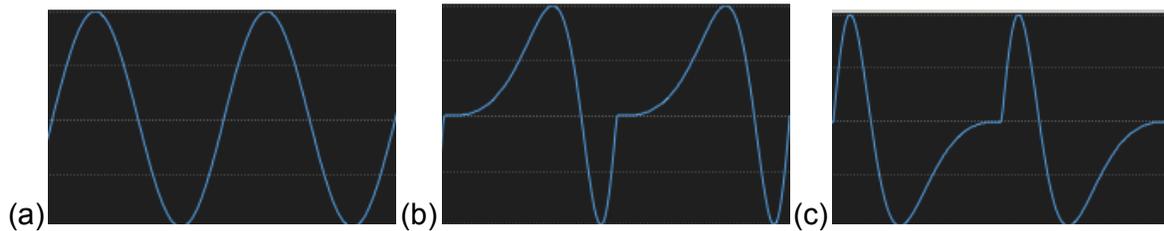


Shuffle adjusts the ratio of the first cycle to the second cycle.



Shuffle Amounts: (a) Default 50%, (b) 75%, (c) 10%.

Skew adjusts the cycle speed as the playhead moves through the cycle, skewing the waveform to one side or the other.

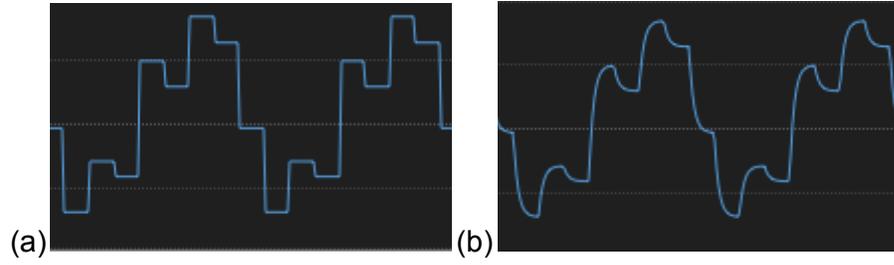


Skew Amounts: (a) Default 0%, (b) 80%, (c) -80%.

Lag & Scale



Lag adds a resistance to output change, giving a smoothing effect to the output.



Lag (a) 0%, (b) 80%

Scale is a simple multiplier for the output value. Negative scale inverts the signal.

Tools



Move Tools



Movement tools shift the waveform **Left**, **Right**, **Up**, or **Down**. Left and Right movements use the **Bands** parameter for shift amount.

Modification Tools



Shrink decreases the size of the waveform. **Grow** increases the size. **Grow+** normalizes the waveform so it fills the entire vertical range.



Random randomly sets the level for each band.

Alter slices the waveform up between **Start** and **End** into band size segments and shuffles them around.

Quantize sets the level for each band based on the middle value of that band. Useful for taking smooth waveforms and making them stepped.

Filter Tools



Smooth applies a low pass filter to the waveform to round off the edges. **Smooth+** removes even more high frequency components.

Sharpen applies a high pass filter to the waveform and accentuates the peaks and edges.

Sharpen+ removes even more low frequency components.

Expand & Repeat



Expand stretches the waveform between the **Start** and **End** points to fill the entire horizontal range and reset the **Start** and **End** points. If **Start** and **End** are swapped, the waveform is reversed.

Repeat takes the waveform between **Start** and **End** and repeat fills it on both sides.

Capture



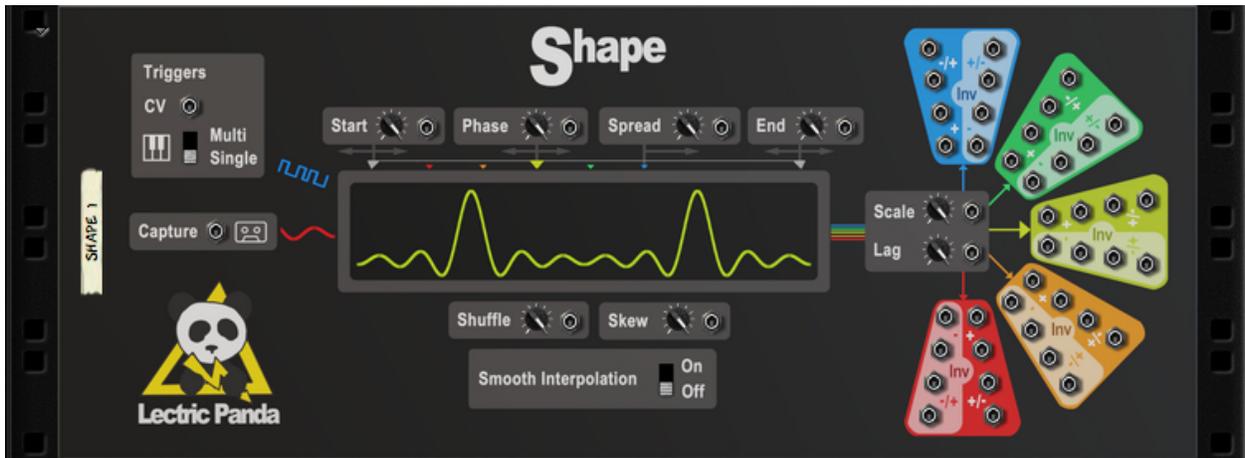
The **Capture** toggle activates CV recording mode. A CV signal must be attached to the Capture socket on the back panel. The main waveform display turns into a real-time oscilloscope view to see what is being captured. Once **Capture** mode is deactivated, the real-time waveform freezes and Shape returns to normal operating mode with the newly captured waveform replacing the previous one.

Line



The **Line** toggle activates line drawing mode on the main waveform display.

Back Panel

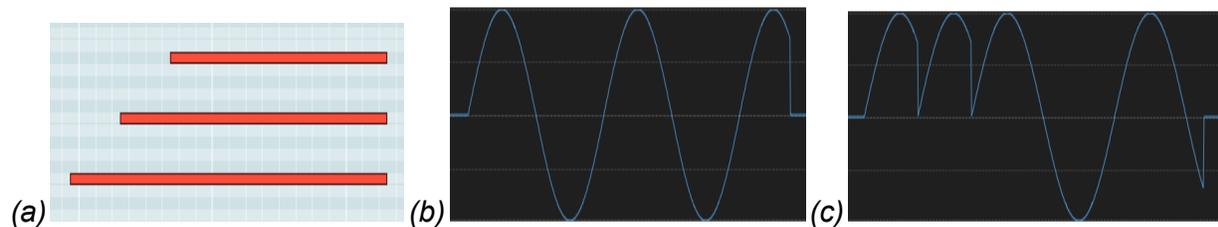


Triggers



The **Trigger CV** input is used to retrigger Shape based on its **Run Mode**. See the **Trigger & Run Mode** Section.

When shape is triggered via **MIDI Notes**, the **Note Retrigger** parameter is used to configure the behavior. **Single** mode triggers on the first key down and won't retrigger until all notes have been released, i.e., it triggers only once when playing a chord. **Multi** mode will always trigger on a key down regardless of other notes.



Shape's output in **Trigger Down** Mode. (a) Triggering Midi Sequence. (b) Note Retrigger **Single**. (c) Note Retrigger **Multi**.

Capture



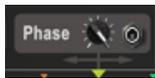
CV Input for CV recording.

Start & End



Modulates the **Start** and **End** points.

Phase



Phase Modulation. To set the Playback Position directly using this input, set the **Run Mode** to **Trigger Down** so the playhead sets at the **Start** Position. Then this input maps a unipolar CV input to the position between **Start** and **End**.

Spread



Modulates the playheads **Spread**.

Shuffle



Modulates the **Shuffle**.

Skew



Modulates the **Skew**.

Scale



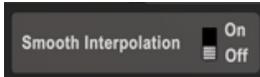
Modulates the **Scale**. When **Scale** is set to 100%, this input behaves as traditional **Amplitude Modulation (AM)**.

Lag

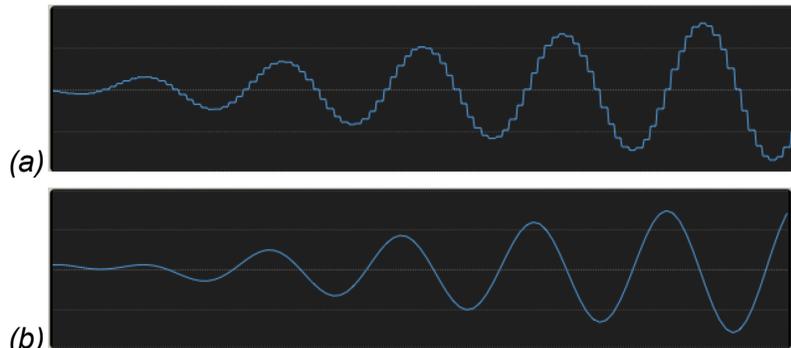


Modulates the **Lag**.

Smooth Interpolation

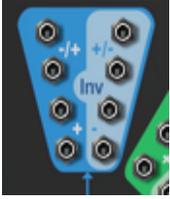


Setting the smooth interpolation **On** will create smooth transitions between each of the 640 bands and avoid stepped values at slow rates. Not recommended for square curves used as triggers.

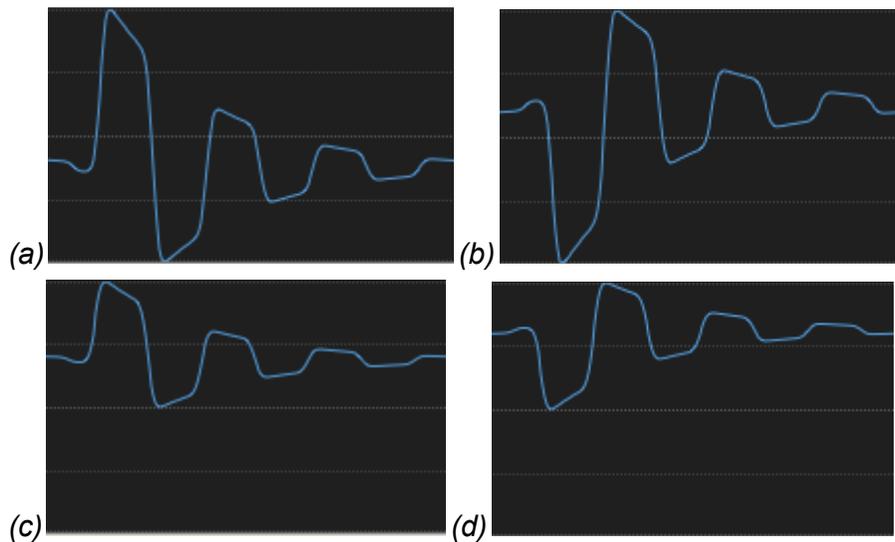


Effects of smooth interpolation. (a) Smooth Interpolation Off (b) Smooth Interpolation On

Output Group



Each playhead maps to a matching color **Output Group**. Each output group contains 4 **Bipolar** outputs (-1.0 - +1.0) and 4 **Unipolar** outputs (0.0 - +1.0). The lighter area of the output group designates **Inverted** output.



CV Outputs. (a) Bipolar -/+. (b) Bipolar Inverted +/-. (c) Unipolar +. (d) Unipolar Inverted -.

Patches



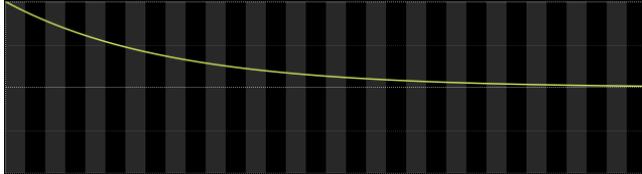
Device patches (.repatch files) store the waveform only. This allows for previewing different waveforms without disturbing all the other parameters specific to your Shape application. All settings are stored in a song file. To create individual patches that include all settings, place Shape inside a combinator and save a .cmb patch.

Included Patches

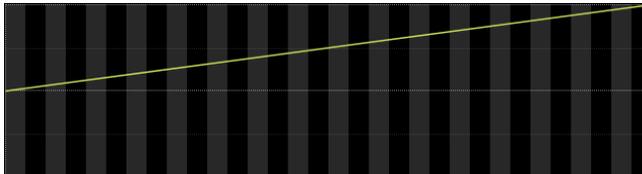
Shape comes preloaded with over 9000 patches organized by type.

Basic Waveforms

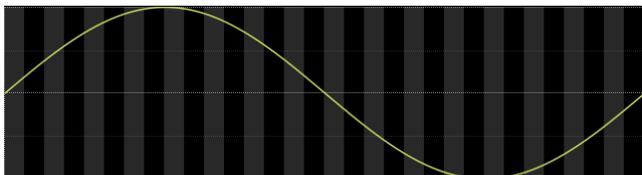
DCY - Decay Slope



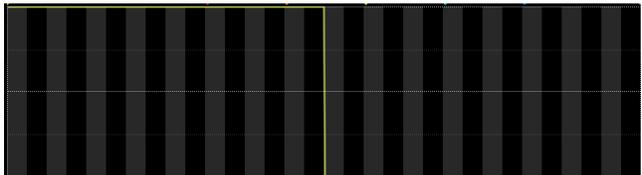
SAW - Saw Wave



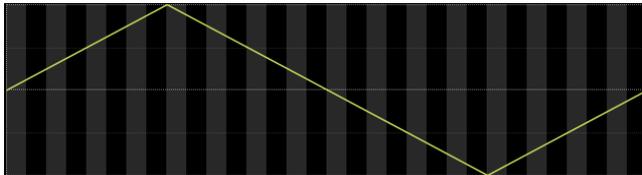
SIN - Sine Wave



SQ - Square Wave



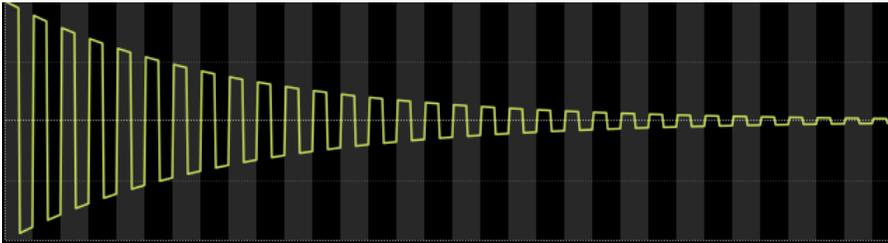
TRI - Triangle Wave



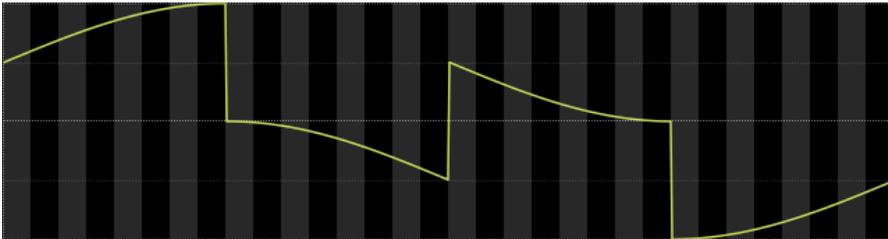
Complex Waveforms

The majority of included waveforms are permutations of the Basic Waveforms added and multiplied against each other.

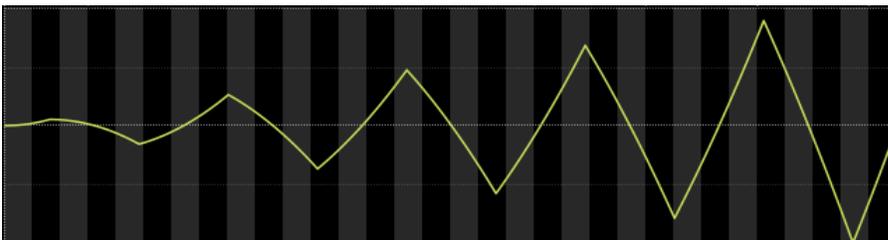
The naming Scheme is **AAA\$BBB MMNN**.repatch. Where **AAA** is the first Basic Waveform type. **BBB** is the second Basic Waveform type. **\$** is the operation performed on the two waveforms, + for addition, x for multiplication. **MM** is the number of cycles of the first waveform. **NN** is the number of cycles of the second waveform.



SQxDCY 3201 - 32 Square Waves x 1 Decay



SIN+SQ 0102 - 1 Sine Wave + 2 Square Waves



SAWxTRI 0105 - 1 Saw Waves x 5 Triangle Waves