MIDIMod! 1.0
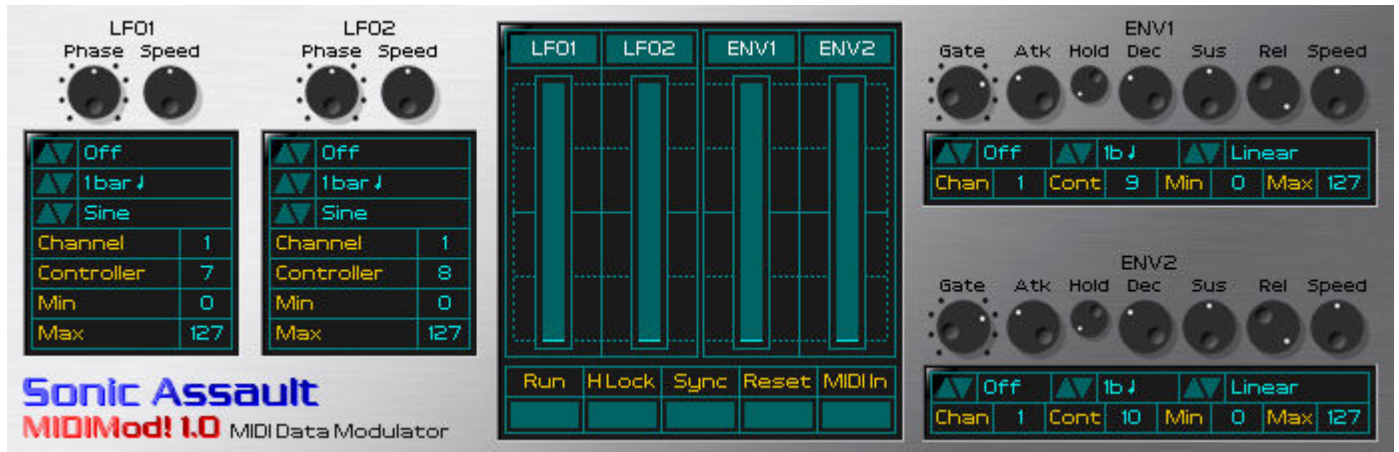
MIDI Data Modulator

Features:

2 LFOs with 200 real-time generated waveforms.

2 AHDSR Envelope Generators with selectable contouring.

Timed / MIDI / MIDI Sync / Gate triggering.

User selectable MIDI Channel / Note / CC input triggering.

Variable Wave / Envelope output.

Linear and Waveform displays.

Host Locked / Free Run operation.

Manual BPM override.

Data Output Reduction.

Global MIDI Reset.

LFO

LABELS – Clicking on the LFO label above the PHASE and SPEED controls allows the user to change the text of the label.

PHASE – Changes the start phase of the waveform [-180˚ - +180˚]. Clicking on the markers around the rotary control will set the phase to a predetermined value: -180˚, -135˚,-90˚,-45˚, +45˚, +90˚, +135˚, +180˚. Clicking on the control's label returns the control to its default value [0˚].
With the PULSE waveform selected, the control's label will change to read WIDTH and the markers then represent a percentage of the pulse width: 1%, 12.5%, 25%, 37.5%, 62.5%, 75%, 87.5%, 99%. As with the PHASE control, clicking on the control's label returns the control to its default centre value [50%].

SPEED – Allows manual fine control over the basic TIME setting [+/-10%].

RUN MODE – The LFOs have three run modes:
    TIME – Generates a continuous repeating waveform.
    MIDI SYNC – As TIME, but allows the waveform to be restarted by an external MIDI note/controller message.
    GATE – When externally triggered the LFO will produce a single complete waveform.

TIME – Selects the duration of a single waveform cycle. Values range from 1/16th to 32 bars. The time values scroll through whole, dotted and triplet values indicated by the note symbol after the selected time value. [Note: The 'SONIC' font supplied in the downloaded zip file must be installed in order for the note symbols to be displayed – see later]

WAVE – There are 200 waveforms available to the LFOs. These consist of basic shapes and a number of variations.

CHANNEL – Selects the MIDI output channel for the LFO.

CONTROLLER - Selects the required MIDI controller.

HIGH/LOW – Scales and offsets the MIDI output by independently adjusting the highest and lowest output MIDI values generated by the LFO [0-127]. The output can be inverted by setting the LOW value above the HIGH value.

Controls visible with MIDI IN selected

MIDI IN CHAN/NOTE – Clicking on the control toggles the NOTE/CONTROLLER selector.

MIDI IN – Selects the MIDI input channel for triggering the LFO in MIDI SYNC or GATE modes.

NOTE/CONTROLLER – Selects the MIDI note/controller value for retriggering the LFO in MIDI SYNC or GATE modes.

ENVELOPE GENERATORS

Most of the controls relating to the envelopes are identical in description and function to those of the LFOs – apart from the following:

GATE – Determines the time of the gated portion of the envelope. The markers for the control act in exactly the same way as the pulse WIDTH control for the LFOs – see above.

AHDSR – Standard Attack, Hold, Decay, Sustain and Release envelope controls.

RUN MODE – The envelopes also have three run modes:
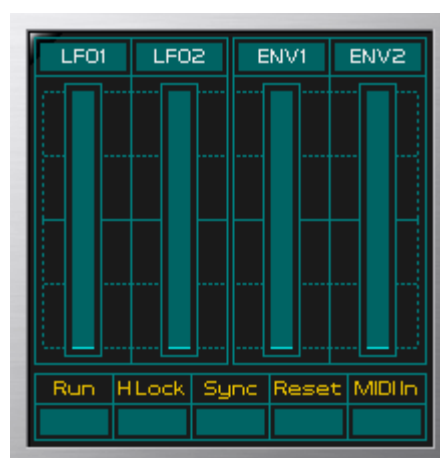 TIME – Continuous generated repeating envelope.
 MIDI – Externally triggered and sustained envelope.
 GATE – Triggers a single cycle TIME determined envelope.

CONTOUR – Used to change the shape of the ADR portions of the generated envelope. There are 10 single contours available – Linear, Exponential, Inverse Exponential, Exponential2, Root, Inverse Root, Exponential Root, S-Curve, Inverse S-Curve, S-Curve2. Plus 3 combination contours, representing the ATTACK portion of the envelope followed by the DECAY and RELEASE sections – Linear/Exponential, Exponential 2/Exponential, Inverse Exponential/Exponential.

DISPLAYS and GLOBAL CONTROLS

LINEAR BAR DISPLAY

DISPLAY SWITCHES – These select the individual WAVE/ENVELOPE DISPLAYS. Clicking on a currently highlighted switch will return the display to the default (shown) LINEAR BAR DISPLAY. The label of the switch will change if the user changes the text of the LFO/Envelope labels

LINEAR BAR DISPLAYS – These show the scaled real-time output of the LFO/Envelopes.

RUN – Starts the active LFOs/Envelopes after the first bar message sent by the host application.
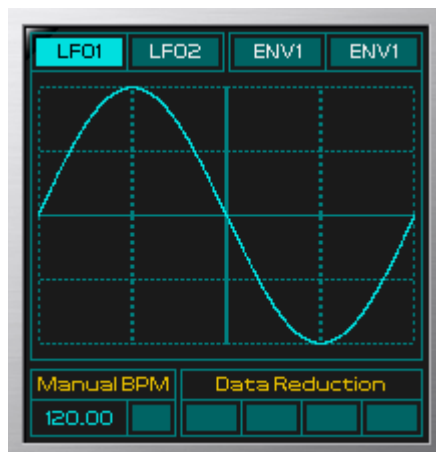
H LOCK – Locks the timing and transport control of the plug-in to the host application.

SYNC – Used to synchronise the LFO/Envelopes when individually started in FREE RUN mode (H LOCK off).
[Note: The synchronisation will occur at the first bar start message sent by the host after the SYNC button is activated.

RESET – Sends a global MIDI controller reset message to the host program.

MIDI IN – Reveals the hidden MIDI IN CHAN NOTE/CC controls for the LFO/Envelopes – see above.

WAVE DISPLAY

WAVE DISPLAY (LFO) – The display shows a representation of the currently selected wave, and its scaled/offset output and phase in relation to the settings of the MIN, MAX and PHASE controls.

WAVE DISPLAY (Envelope) – Shows a representation of the envelope's shape, scale/offset, as determined by the current HIGH, LOW, GATE and CONTOUR settings.

MANUAL BPM – Overrides the host programs tempo setting. Enter the required BPM value in the text box and click on the switch to the right of the box to activate.

DATA REDUCTION – Reduces the amount of MIDI data output by an individual LFO/Envelope – see below.

NOTES

MIDI DATA OUTPUT and DATA REDUCTION – The amount of MIDI data produced by the VST is relative to the TIME and BPM settings, plus the overall scale of the output wave/envelope. In normal operation each change in MIDI data value is passed unimpeded to give the smoothest possible wave/envelope output. However, the faster and larger the output range of the generated wave/envelope the greater the data produced. Which, in some cases, can result in 'glitches' in the data flow.
To combat this problem the DATA REDUCTION controls acts to reduce the flow of MIDI data by only allowing data to pass in specified timed blocks (approximately 90-120 samples). Whilst this effectively reduces the MIDI data flow it can result in noticeable quantization effects. So a certain amount of experimentation will be needed.

It is impossible to accurately predict when the use of DATA REDUCTION will be appropriate, as individual system specifications, host applications and the generated wave/envelopes themselves will play a large determining factor. However, by reducing the tempo of the host application when recording fast modulated wave/envelopes and/or recording each LFO/envelope individually. This can help to reduce overall MIDI data flow, CPU load, and maintain the resolution of the wave/envelope.

LINEAR DISPLAYS – The displays are subject to the visual performance of the host application and in some cases may appear visually 'jerky'.

WAVE DISPLAYS – When not visible the WAVE DISPLAYS are disabled to reduce CPU load. After switching from the LINEAR to the WAVE DISPLAY there might be a small delay before the display locks on to the current selected wave/envelope.

LFO ISSUES – In some cases the wave shape will not exactly correspond to the expected output MIDI value – this is most noticeable with waveshapes where a portion of the shape has a sustained value equal to MIDI value 64 when the wave is at full scale. Partially due to the fact the plug uses a method of Phase Distortion to produce the waveforms for a single LFO this has a downside of producing unstable results when generating values close or equal to the natural centre of a generated waveform. The solution was to offset the wave fractionally. This means that the centre of some waves may correspond to MIDI value 63 rather than the expected 64.

SONIC FONT – The 'Sonic.fon' file must be installed on your system to display the text in the selector boxes correctly. This is a copyright free font file originally designed for use with Sonic Assault plug-ins, but you may use it as you see fit – including in your own VST projects (although, a credit in this direction would be nice ☺).
Please note: The version dated 10/08/09 supersedes all previously released versions of the font, but is fully compatible with earlier Sonic Assault VSTs.

To install the Sonic font in Windows:

1. Open 'Fonts' in Control Panel.
2. On the 'File' menu, click 'Install New Font'.
3. In 'Drives', click the drive the required font is stored on.
4. In 'Folders', double-click the folder that contains the font you want to add.
5. Tick 'Copy fonts to Fonts folder'.
6. In 'List of fonts', click the font you want to add, and then click 'OK'.

INSTALLING MIDIMod! – Please consult your VST host application's documentation for specific instructions on installing VST plug-ins.

NO LEGAL REQUIREMENTS OR OBLIGATIONS ARE MADE BY THE CREATOR AS TO THE USE OF THIS VST PLUG-IN. LIKEWISE; NO LEGAL REQUIREMENTS OR OBLIGATIONS WILL BE MADE ON ITS CREATOR. THE PLUG-IN IS FREE – YOU USE IT AT YOUR OWN RISK.
HOWEVER, PURLEY AS A MATTER OF COURTESY, I DO ASK ANYBODY WHO WISHES TO DISTRIBUTE THIS PLUG-IN ON A WEB SITE OR COVER DISK CONTACT ME BEFOREHAND.

I make no guarantees that MIDIMod! will run on any specific system, or in all available host programs.

CREDITS – Thanks to Jeff McClintock for SynthEdit – http://www.synthedit.com/
Special thanks to:
Chris Kerry – http://www.chriskerry.f9.co.uk
Dave Haupt – http://www.dehaupt.com/SynthEdit
Kelly Lynch – http://www.rubidiumhexafluorosilicate.com/synthedit/
Oli Larkin – http://www.oli.adbe.org/
Simonluca Laitempergher – http://www.puntoexe.info/SLSEModules/
HGSounds - http://www.hgsounds.com/info/se-modules
And Frank Trossen for their indispensable modules

Plus Steinberg for the VST/i format – www.steinberg.net

All the best... Jez