Wiard Synthesizer Company Envelator Module

Preliminary Manual (v 0.2.1)

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Please see block diagram at end for additional information

The Envelator is a complex multi-function module that displays the Wiard system's implementation of some historically important modules. The Envelator encapsulates two AD/AR envelopes in a newly designed, complex package with obvious nods to modules by Buchla and Serge.

LED Series

The LED bank at the top of the module is split into two sections, where each 4-lamp section shows the current output value (in volts) of its respective envelope.

The LEDs increment in 2 volt steps. When the voltage is above 8 volts, the last LED remains on. When no LEDs are lit, the voltage is below 2 volts.

Front Panel Controls

A (Attack):

The attack time for the envelope. Since there are two envelopes implemented in this module, there are two attack controls available.

D (Decay/Release):

The decay and/or release time for the envelope. Again, there are two envelopes in the module, so there are two controls on the panel. If the AR/AD/Cycle switch is set to AR, this control is the release time used when a gate signal is removed from the Gate IN input jack. If the switch is set to AD or Cycle, this control is the decay time measured from the time that the envelope completes the attack cycle time.

AMod (Attack Modulation Setting):

Attack Modulation allows for voltage control of the attack time. This control allows adjustment of the amount of modulation to the attack time as input into the AMod input jack.

DMod (Decay Modulation Setting):

Decay Modulation allows for voltage control of the decay (or release) time. This control allows adjustment of the amount of modulation to the decay/release time as input into the DMod input jack.

MixMod:

The Mixture Modulation control is an attenuator for the MixMod voltage input. This provides for voltage control of mixed envelope (or other signal) crossfading. When used as a voltage controlled ADSR, this acts as the sustain voltage control.

Mix:

The Mix control will crossfade from the Mix1 and Mix2 input jacks, sending the output to the MixOut output jack.

When the Mix control is used to for the two envelopes in the Envelator, this control will allow you to create an ADSR. The method for doing this is as follows:

Use Envelope 1 in AD mode, Envelope 2 in AR mode.

Send the outputs of the two envelopes to the Mix1 and Mix2 inputs.

Set the Mix control to the 12 o'clock position (evenly mixing the two envelopes).

Both attack stages will affect the attack stage, then the decay stage of Envelope 1 will drop the voltage to the sustaining level (as con-

trolled by the Mix control). When the gate is released, the release stage of Envelope 2 will provide a release stage for the overall envelope shape.

The MixMod control behaves like a normal "Sustain" level control, providing voltage control of the sustain level.

Front Panel Switches and Buttons

AR/AD/Cycle (Function Select Switch):

This switch determines the function of the envelopes. When set to AR, the envelope will act as an AR envelope, maintaining full level until the gate goes "low". In AD mode, the envelope acts as an AD envelope, and will begin decay as soon as the attack stage is complete. In Cycle mode, the End output "pulses" when the decay stage is complete. This pulse is fed back to the envelope input, and will force the envelope to re-trigger. In this mode, the Envelator output functions as a shaped triangle waveform LFO.

When in "Cycle" mode, the SQR output acts as a square wave LFO with the pulse width determined by the settings of the A and D controls. This output can also be used to clock the Wiard Sequantizer.

Each envelope is individually switched.

# Patchbay Jacks

(listed top-to-bottom, from left to right)

Jack Label	In/Out	Use
AMod (x2)	Input	Voltage control input for Attack rate modulation.
DMod (x2)	Input	Voltage control input for Decay/Release rate modulation.
End (x2)	Output	When the Decay (or Release) phase of the envelope is complete, a "pulse" is output from this jack.
Gate (x2)	Input	The Gate or Trigger input used to "start" the envelope function.

Mix 1	Input	Input 1 for the Mix function. This input is nor-maled to the O+ output of Envelator one
O+ (x2 each)	Output	The output voltage.
O- (x2)	Output	An inverted output of the envelope voltage.
Sqr (x2)	Output	The output of the trigger latch, where the sig-nal goes "high" during the attack phase, and goes "low" for the decay portion of the enve-lope.
Mix 2	Input	Input 2 for the Mix function. This input is nor-maled to the O+ output of Envelator two
MixMod	Input	An input signal that is added to the Mix front panel control for Mix modulation.
MixOut	Output	The output of the Mix function. This output is normally a mix of the two Envelator positive outputs (ADSR)

WIARD Dual Envelator Block Diagram

WIARD DUAL ENVELATOR MODULE BLOCK DIAGRAM
ONE OF TWO IN MODULE
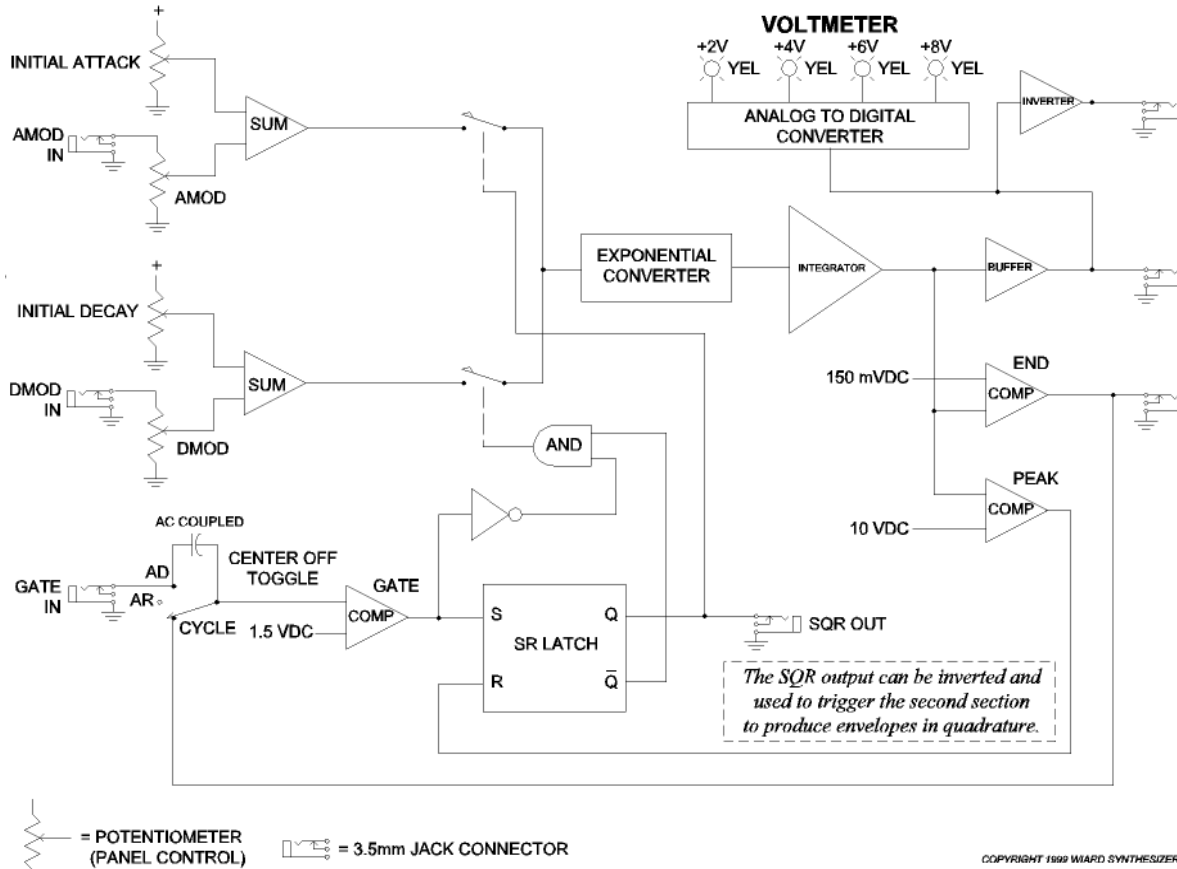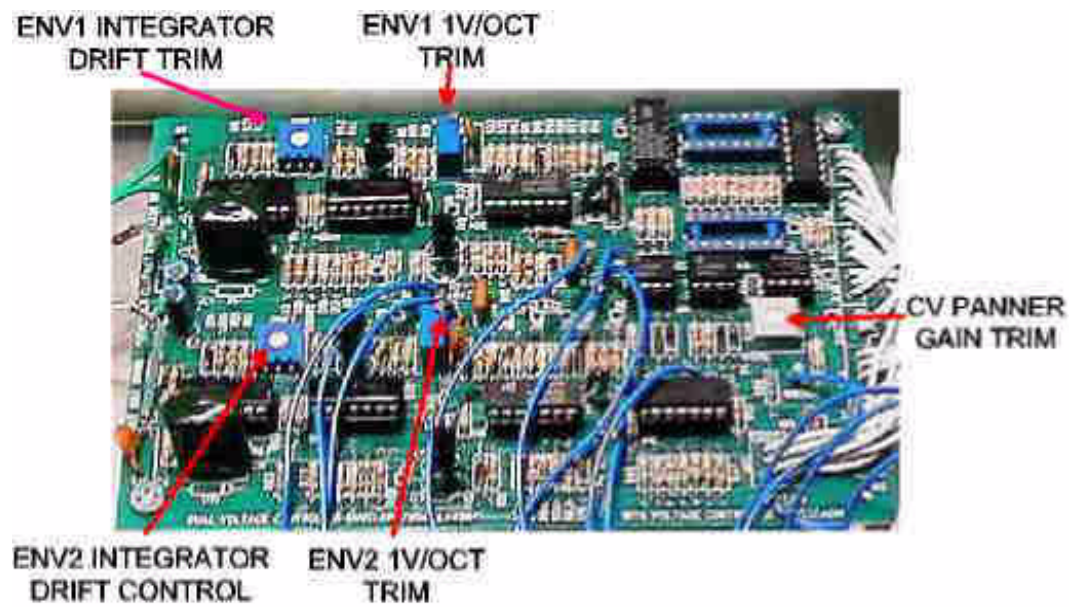
Envelator circuit board lay-out and trim pots.