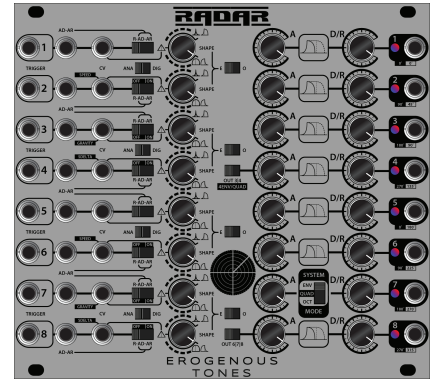


ER O G E N O U S T O N E S

RADAR

8xAD/AR Envelope Generator



To get you started, here is a quick rundown of the functions. For the latest information, visit our website at: <http://erogenous-tones.com>

RADAR was designed to be a high density octal AD/AR envelope generator providing a variety of features and modes that you can work with. RADAR stands for (R)epeating, AD, or AR.

The SYSTEM MODE switch allows you to select one of 3 modes that RADAR can be used as; ENVELOPE MODE, QUAD MODE, or OCT MODE.

ENVELOPE MODE is used when you want 8 independent envelope channels. Each channel has a trigger input that is normalized to the next channel below it.

Each channel has a RADAR switch that can be changed between Repeating, AD or AR mode. A GATE input can be used to be selected between AD and AR based on level. AD works on a rising gate input and generates an envelope that follows the full time of the ATTACK phase followed by the fulltime of the RELEASE phase. AR mode continues the ATTACK phase for as long as the trigger input is HIGH when the lane is in analog modelling mode. This means if the trigger is very short, the ATTACK will not go full level and will start to RELEASE from a lower point. When in digital mode, short trigger/gate inputs will behave just like AD mode.

For both digital and analog modelling mode, if the trigger/gate input is held high longer than the ATTACK phase time, the envelope will remain high until the gate/trigger input goes low, then it will start decaying.

The LEDs indicate BLUE for rise, PURPLE for holding the value in AR mode, and RED for fall.

Lanes are controlled in sets of 2 for the modelling mode and envelope shape mode. DIGITAL mode means that triggers will reset an envelope back to zero no matter where they are in the cycle, which creates discontinuities like traditional digital envelopes as they snap to zero. Frequency is also constant in repeating (LFO) mode when in digital modelling mode. Analog modelling does not reset the envelope unless you are in a decay/release state, and starts the attack phase from the current level (think of this as a charging or discharging of a capacitor, which is what the math models).

The E/O or opposite envelope shape setting swaps the release/decay shape from being equal to opposite. For a LOG rise you will have a EXP fall when in opposite (O) mode. (In O mode, when an envelope is set to linear, the shape of each side will be linear no matter the switch position as this is what the shapes are centered around)

The shape knob and corresponding CV allow you to change the shape between LOG, LIN or EXP (and all shapes between them). The CV input offsets the setting of the knob so be sure to use an attenuator externally to control the range of the modulation you are applying.

Lane 4 and Lane 8 have an output switch that is used to generate composite waveforms on their respective outputs. When in this mode, their LED will always be purple. Lane 4 will output whatever the max value is on lanes 3 and 4 together (almost like an analog OR function). On lane 8, this will be the max values of lane 6, 7 and 8. Using a max value approach gives more variety than a simple summation method so you are not constantly maxing out the envelope value.

When in Repeating (LFO) mode, trigger inputs will reset the waveform. Lanes in analog mode will not reset unless they are in the release stage, and they will start the attack phase from the level they were at when they reset from the release phase.

To achieve the fastest frequency on the LFO, in analog mode, set shape to about the 12'o'clock position will give you around 1.18kHz EXP shape, at 9'o'clock you get 610Hz LIN, and at 6'o'clock you get about 1.18kHz LOG. For digital, max frequency is 591Hz.

QUAD MODE allows you to use either 2 QUAD envelopes, or 1 QUAD envelope and 1 set of 4 Envelopes that work the same as ENVELOPE MODE. To set this, use the Output switch on lane 4 to select between both modes for lanes 1-4. The max value output modes do not exist in QUAD mode.

When a set of 4 lanes is used in QUAD mode, each lane will be 90 degrees apart from each other. Only lane 1 and 5 respectively will set the rise/fall time of all the lanes. (E/O is also only set from lane 1 and 5)

When in QUAD mode, all lanes work in digital mode only, and a reset on the first lane will reset all lanes to their initial condition (and phase offset to one other).

The 2nd, 3rd and 4th respective lanes have additional CV capability you can use. The switch in R position shuts off CV control. AD/AR are off and on respectfully and can be activated by switch or by the AD/AR input level. The 3 CV parameters are SPEED, GRAVITY and SDELTA. SPEED will allow you to modulate the frequency of all channels of the QUAD together. Basically both the rise and fall time are increased/decreased by some proportional value the SHAPE knob setting (or CV). Using an attenuator is important to control the range. Setting the knob center will be no frequency change.

GRAVITY indicates how the 4 waves are related to the 0 degree first lane. The shape/cv setting causes the 90/180/270 waveforms to be logarithmically attracted or repelled in time to the 0 degree waveform.

SDELTA is shape delta and controls basically an interpolated offset of shapes from the 1st position to the last position. Be careful when modulatiing this value with very steep values as there will be jumps in the waveform since the shapes have different values for the same time offset.

OCT MODE is the same as QUAD, except you are using all 8 lanes and each is 45 degrees apart.