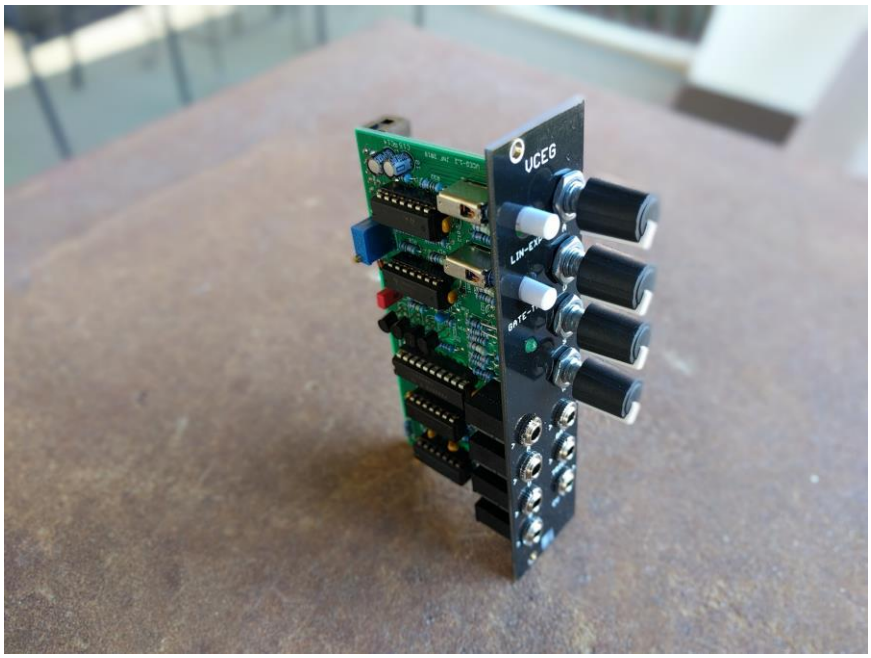
VCEG V1.2 – User Guide

The module is designed for a monophonic Analog synthesizer.



The module is designed and sized for **Eurorack** systems. You will need a 16-10 pin **Eurorack** power ribbon connector with –12/0/+12 which is connected to a synth power supply.

Calibrating the VCEG

There are two calibrations. Start with the following:

1. Power up the module.
2. Attach -ve probe of multimeter set to the 20V range (or an oscilloscope) to the GND of a patch cord or other accessible signal ground.
3. Attach the +Ve probe of the multimeter (or an oscilloscope) to the signal pin of a patch cord plugged into the CV out jack of the VCEG.
4. Set pots ATTACK to between 50% and maximum, DECAY, RELEASE and SUSTAIN to minimum.
5. Plug a GATE signal (from a keyboard or other gate source) into the GATE input.

Attack Peak

1. R29 (ATTACK PEAK) determines the maximum voltage that the ATTACK will reach before beginning the DECAY time.
2. Turn the trimmer R29 fully counterclockwise by turning up to 25 times or until you hear the click of the end stop, then turn it 10 turns clockwise. The following steps will then need to be repeated until the CV output rises to the desired ATTACK PEAK level and then immediately starts to decay:-
    a. generate and maintain a GATE signal by pressing and holding a key on the keyboard,
    b. measure the CV OUT signal. It should rise (ATTACK) to a maximum value and may start to decay. The objective here is to get the signal to decay immediately the attack reaches 10V.
    c. while holding the key down, adjust R29 until the CV OUT signal switches to decay mode when it reaches 10V, maybe 3 or 4 turns either way.
    d. If the voltage is high, turn the trimmer clockwise until the voltage gets to around 10v and then fine tune it. If it is too low, attack will not reach maximum before decay starts, too high and the attack wil be slow to turn around to the decay or it will not turn around at all but remain high.
    e. release the GATE signal (key) and allow CV OUT to reach 0, and repeat the exercise

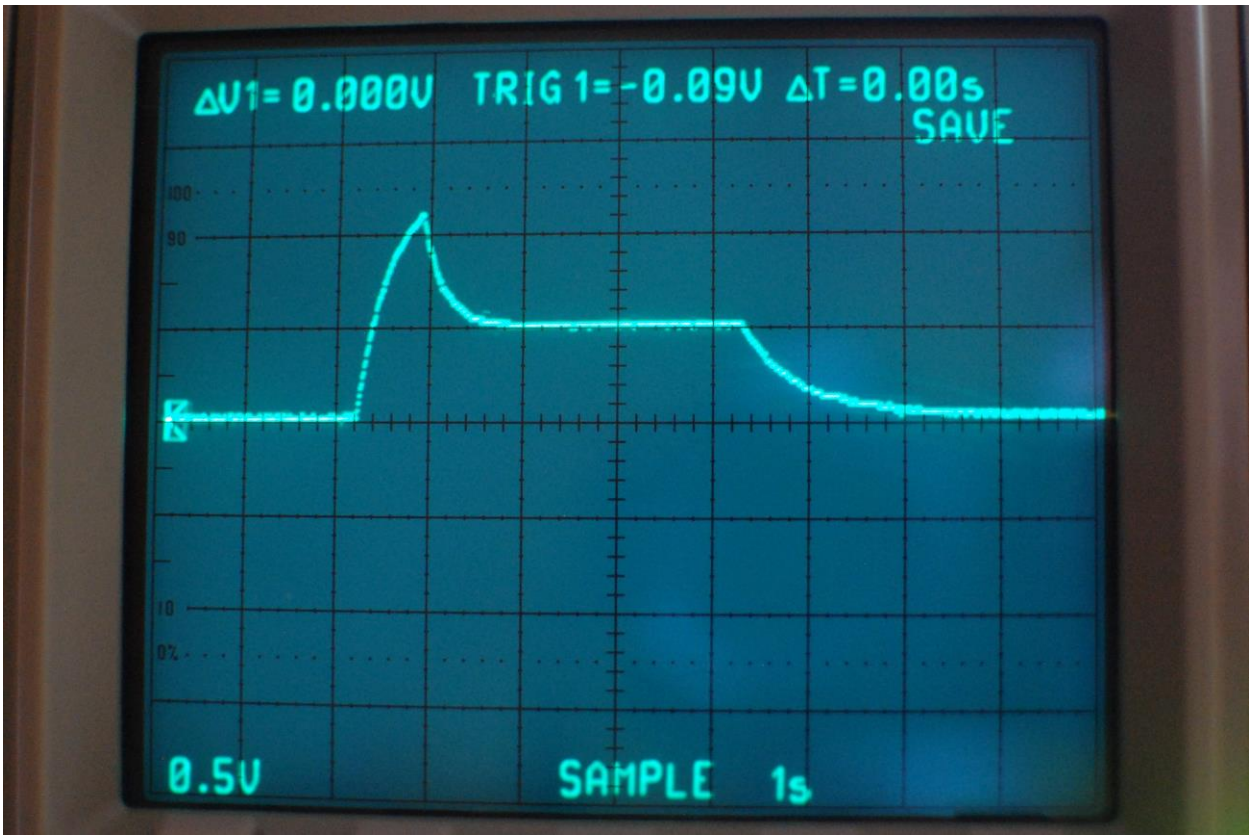
3. Repeat until the signal at CV OUT reaches an ATTACK PEAK of 10V and then immediately starts to decay.

Maximum Sustain Level

1. Turn the Sustain level pot to maximum
2. Press and hold a key until it reaches the sustain level and continue holding.
3. Turn R27 (MAXIMUM SUSTAIN) trimmer in either direction until the voltage meaured is +10V
4. Now when VR3 (SUSTAIN LEVEL) is set to maximum, there will be no DECAY time. You can play with this setting if you want different behavior.

Operation

The Envelope Out jack will in general be used to control a VCA or filter in response to the ADSR curve generated during the time that a GATE signal is applied to the GATE jack.



Operation

1. Gate In
2. Retrig In
   For keyboard controller with retrigger output, this will reset the envelope to the attack phase.
3. A, D, S, R
   Potentiometers for ADR section times and S level.
4. > A, > D, > S, > R
   CVs for ADSR sections. Standard 0 to 10V but small negative voltages will shorten the A,D and R times. Negative S will produce a sustain level below 0V.
5. Linear/Exponential
   Linear will shorten the envelope as well as change the shape.
6. Gate/Trig
   Gate: When gate held, envelope follows ADS stages. When gate released, R stage begins.
   Trig: When positive edge of gate signal, envelope starts A stage. The envelope continues with the R stage if the gate is released. If the gate is held, the ADS stages will be followed until the gate is released, in which case the R stage is entered immediately.
7. Envelope CV out