3340 Analog VCO MU

Contents

Description

The Electrosmith 3340 VCO is an all analog, voltage controlled waveform generator that uses a reissue of the legendary Curtis CEM3340 IC. Many believe this chip to be the greatest sounding analog oscillator of all time. Simultaneous outputs of sine, triangle, sawtooth, and square waves are available. Temperature compensation circuitry provides precision volt per octave tracking over 10+ octaves across all temperatures and a configurable soft/hard sync input allows time reversal or hard reset of phase for each waveform. The square wave features PWM control with internal active clamp circuitry to limit duty cycle between 1% and 98%: your square will never go silent from PWM modulation. Linear and exponential FM inputs each offer input attenuverters for control over modulation amplitude as well. Snag a piece of history with the Electrosmith 3340 VCO.

- CEM3340 based architecture
- Analog waveform generator
- 10+ octave range with accurate 1V/Oct tracking throughout
- Linear and exponential FM
- Hard and soft sync
- PWM control

Check out a list of famous synths that use the 3340 IC here: https://en.wikipedia.org/wiki/CEM_and_SSM_chips_in_synthesizers
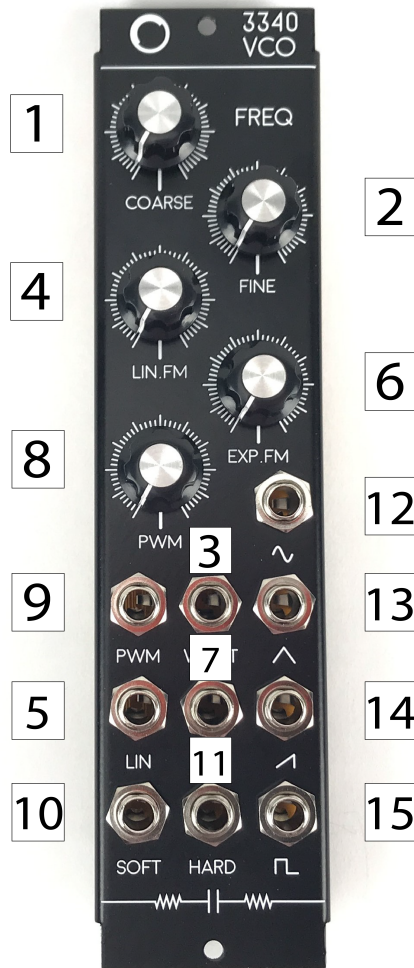
Installation

To install, locate 1 MU of space in your 5U case. Locate the power headers on both your power supply unit and on the back of the 3340 VCO. Connect both via power cable (note that the power header on the 3340 VCO is polarized and cannot be plugged into incorrectly).

Specifications

- Size: 1 MU
- Depth 42 mm
- Current Consumption:
    - +15V: 43mA
    - -15V: 31mA

Diagram

Functional Overview

1. Coarse Frequency Knob

Controls the frequency of the output waveforms. Offers a wide frequency range: 3.45 Hz to 34.5kHz.

2. Fine Frequency Knob

Controls the frequency of the output waveforms. Offers a smaller frequency range: 7 semitones up or down from center.

3. V/Oct

Volt per octave control voltage input.

Input range: -7.5V to +12V.

V/Oct trimpots on submodule allows for tuning and fine adjustments.

4. Linear FM Knob

Acts as an attenuator for incoming CV at the Linear FM input.

5. Linear FM

Control voltage input for linear frequency modulation of waveforms.

Input range: -10V to +10V.

6. Exponential FM Knob

Acts as an attenuator for incoming CV at the Exponential FM input.

7. Exponential FM

Control voltage input for exponential frequency modulation of waveforms.

Input range: -10V to +10V.

8. PWM Knob

Controls the duty cycle of the square wave.

Allows for duty cycle control between 15% and 90%.

9. PWM

Control voltage input for the duty cycle of the square wave.

Input range: -12V to +12V.

Allows for duty cycle control between 1% and 98%.

10. Soft Sync

Trigger input for frequency synchronization of output waveform.

Soft sync input triggers on both rising or falling edges of at least 0.6V. Soft sync does not cause complete phase reset to 0°, but rather phase reversal. On either edge of a soft sync input trigger, the output waveform will mirror itself in time with respect to the trigger edge.

11. Hard Sync

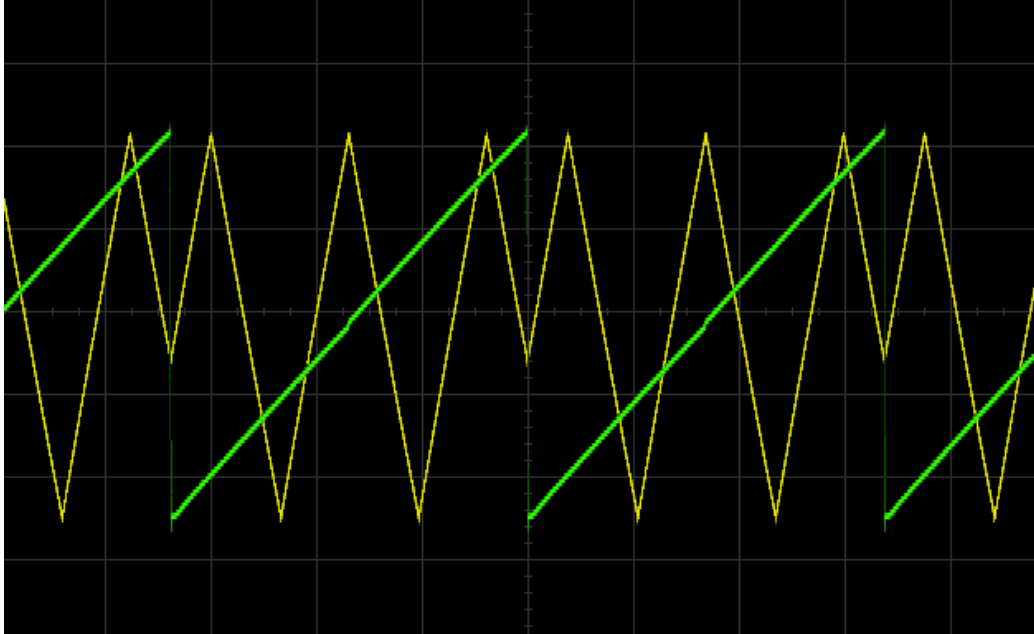Trigger input for frequency synchronization of output waveform.

Hard sync triggers on a falling edge of at least 3V (unipolar or bipolar) and causes output waveform phase to reset to 0°.
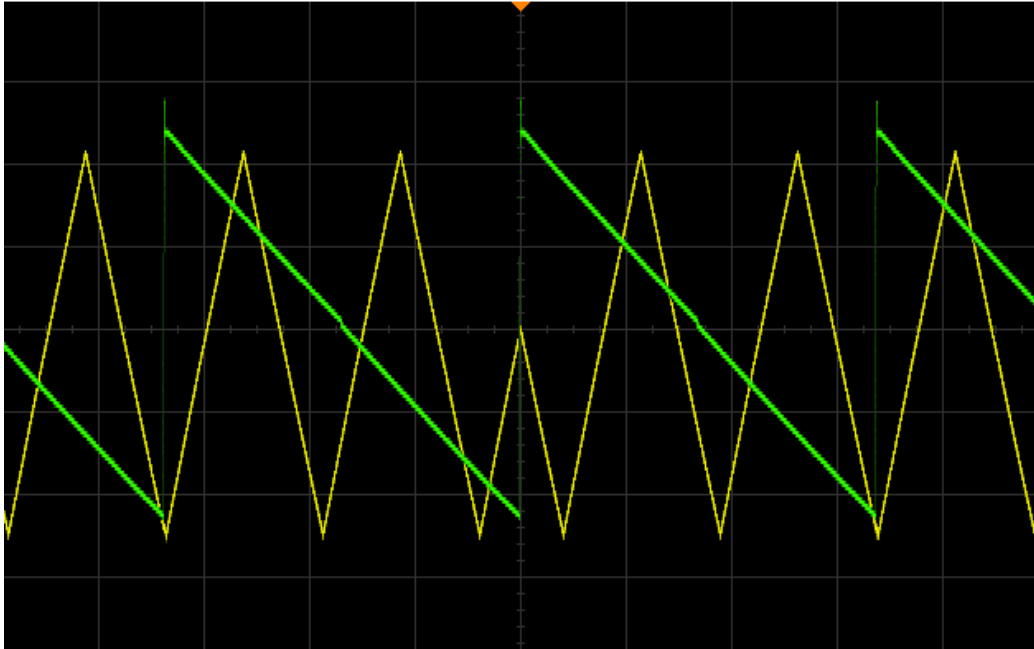
Example Hard Sync
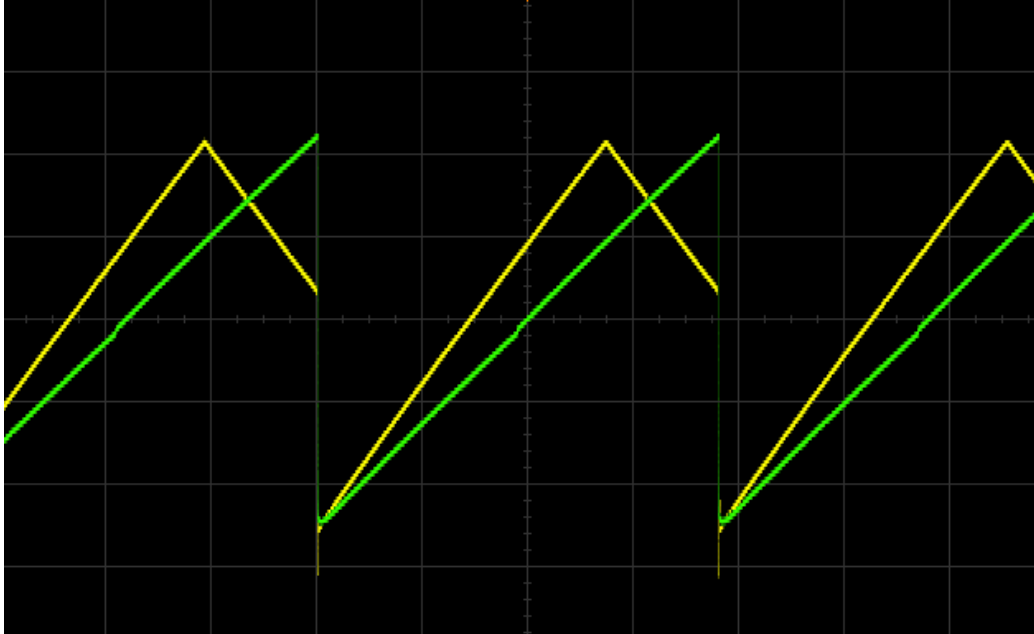
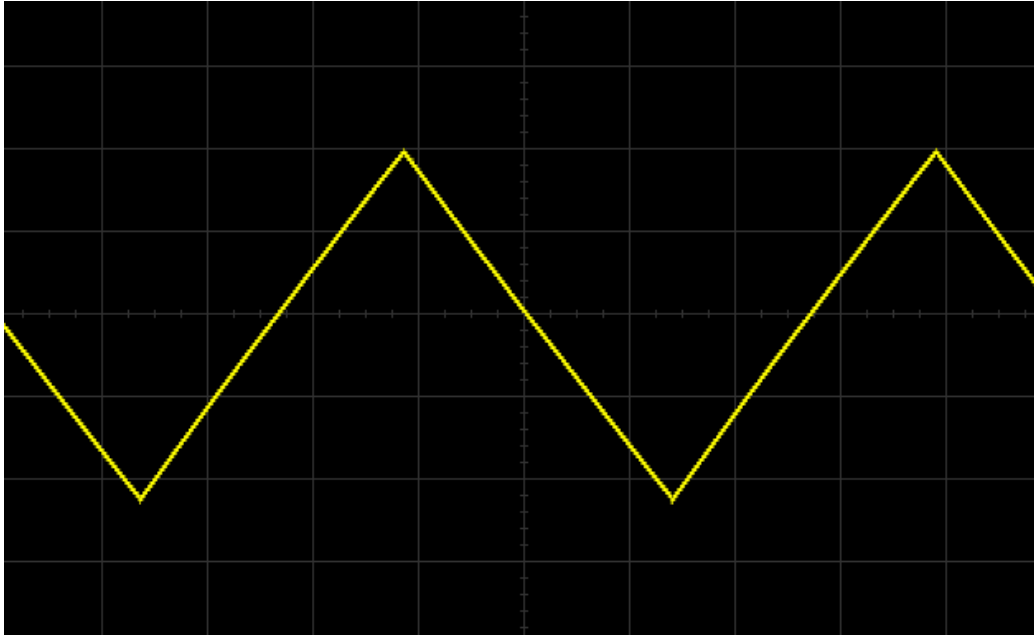**Example Falling Edge Soft Sync**

Example Rising Edge Soft Sync

12. Sine Wave Output

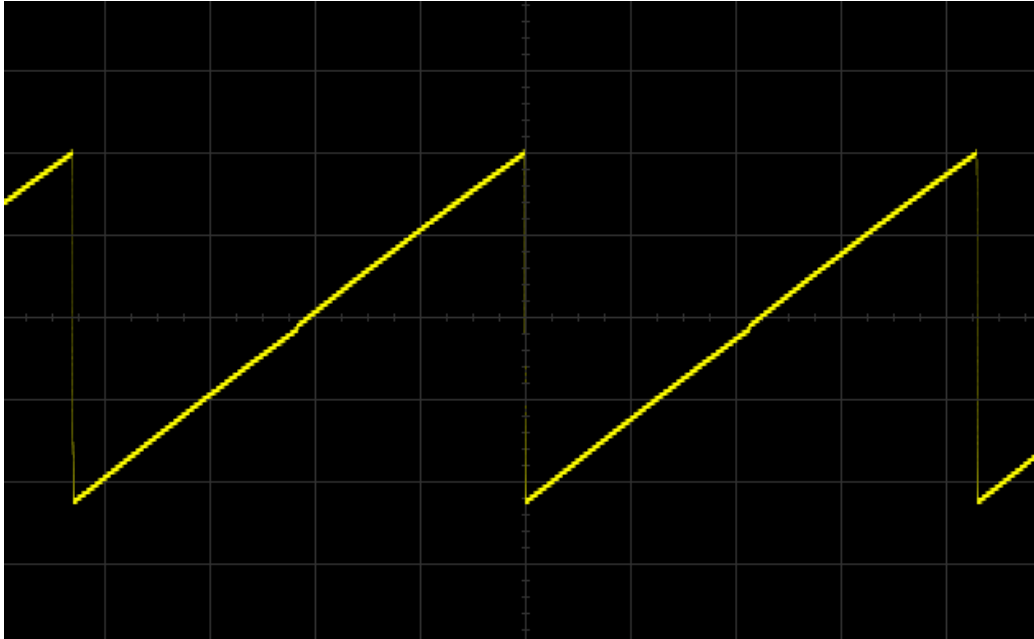Output for sine wave. Waveform is bipolar with 11Vpp amplitude.

13. Triangle Wave Output

Output for triangle wave. Waveform is bipolar with 10Vpp amplitude.

14. Sawtooth Wave Output

Output for sawtooth wave. Waveform is bipolar with 10Vpp amplitude.

15. Square Wave Output.

Output for square wave. Waveform is bipolar with 11Vpp amplitude.