ORBITAL

ANALOG VOLTAGE CONTROLLED OSCILLATOR

User Manual, 2021
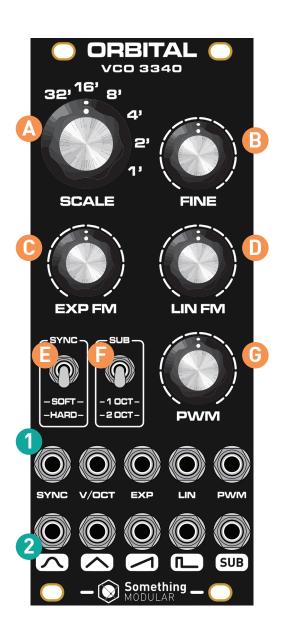
Something MODULAR

About

ORBITAL is an all analog VCO based on the 3340 chip with selectable frequency range and **8 octave tracking**. It provides simultaneous SINE, PULSE, TRIANGLE and SAW waveforms as well as a selectable SUB-oscillator (-1 or -2 octave). This module features selectable frequency range, **coarse** and **fine** tuning. **Linear** and **Exponential FM** inputs and knobs. PWM, manually or CV controlled. **Hard** and **Soft** SYNC input.

Features

- Accurate 1V/Oct tracking over 8 octaves.
- PULSE, SAW, TRIANGLE, SINE and SUB outputs.
- Coarse and Fine tuning knobs.
- Linear and Exponential FM inputs.
- PWM input and control knob.
- Switchable Hard and Soft sync inputs.

Specifications

- Module width : 10 HP
- Module depth : 33mm
- Power Consumption : 36mA at +12V / 20mA at -12V
- Reversed polarity protection

Controls

A. Frequency Range Switch
This rotary switch allows you to select the frequency range of your oscillator. You can choose between 6 octaves.

B. Fine Tuning Knob
This knob allows precise tuning or detuning of your oscillator.

C. Exponential FM Knob
This knob has two functions :
- With EXP jack plugged in, it works as an attenuator.
- Without, it works as a COARSE tuning knob.

D. Linear FM Knob
This knob works as an attenuator for LIN input jack.

E. SYNC Switch
This switch allows you to choose between HARD Sync or SOFT Sync.

F. SUB OSCILLATOR Switch
This switch allows you to choose the pitch of the sub-oscillator output : 1 octave down or 2 octaves down.

G. PWM Knob
This knob has two functions :
- With PWM jack plugged in, it works as an attenuator.
- Without, this knob set the width of the PULSE output.

Inputs & Outputs

1. Input Jacks
- SYNC input : Hard or Soft sync selectable with the swith
- V/Oct input : 1V injected will result in ptich change by 1 octave.
- Exponential FM input : signal goes through the EXP FM attenuator (C).
- Linear FM input : signal goes through the LIN FM attenuator (D).
- PWM input : CV control the PULSE output width. When used, the input signal goes through the PWM attenuator knob (G).

2. Output Jacks
These are the five buffered outputs of your module. Each output will produce a 10V peak-to-peak waveform. From Left to Right : SINE, TRIANGLE, SAWTOOTH, PULSE, SUB-OSCILLATOR (-1 or -2 octave).