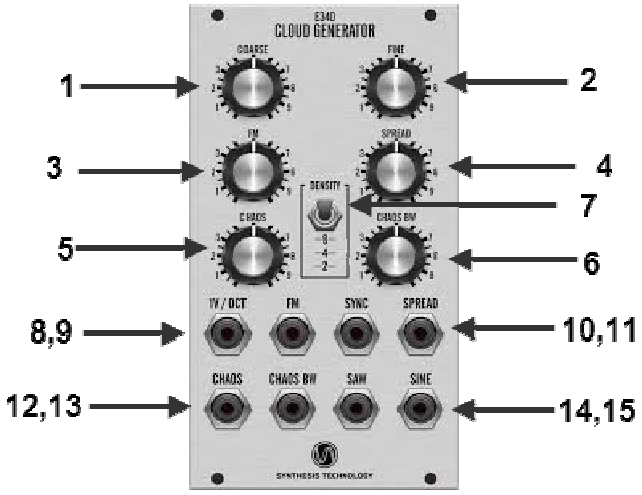
E340 Cloud Generator

www.synthtech.com/euro/e340



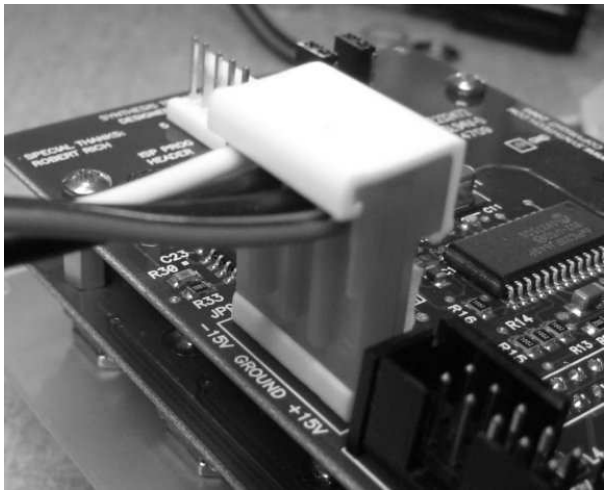
What is the E340?

The Synthesis Technology E340 is a dual-output VCO that contains 8 VCOs. These VCOs can be detuned by a control voltage (SPREAD) and then FM'd by varying amounts of bandpass-filtered white noise (CHAOS sets the depth of FM and CHAOS BW sets the 'speed' of the modulation). The effect achieved can range from the 'Super Saw' sound of the '80s to a swarm of bees.

Since the E340 does not have built-in CV attenuators, you normally first attenuate a CV before plugging it into the E340. If you want to use a full-scale, -5V to +5V signal, the panel knob must be set straight up ('12:00 position') or the internal voltage clamps will limit the swing. Remember, any applied CV to a jack is added to the position on the panel knob for that function. Overdriving a CV input may cause pitch changes.

Connecting to the power supply

The E340 can use either a MOTM 4-pin, MTA-156 style connector (+-15V) or a 16-pin Euro style (+-12V) connector. See the photos below. The Euro ribbon cable has a red stripe to indicate -12V. The supplied Euro power cable is keyed so that when inserted in the E340, the red stripe is 'down' (towards the jacks) and by the white lettering on the pc board.



Controls and Jacks

1- COARSE frequency control covers 8 octaves

2 – FINE frequency control covers ~0.5 octaves

3 – FM amount. This is the attenuator for whatever CV is plugged into the FM input jack.

4 – SPREAD amount. The SPREAD detunes the VCOs about a central frequency (set by COARSE and FINE). Each VCO will detune a different amount and some will increase in pitch while other will decrease. Note that this control is exponential: the detuning starts off very small (<1Hz) but rapidly increases the more SPREAD is applied.

5 – CHAOS amount. Adds filtered noise to the SPREAD effect. This causes each VCO to 'wiggle' in a different manner, adding overall "fatness" to the spectra.

6- CHAOS BW amount. Changes the bandwidth of the filtered noise from narrow to wide in 6 steps. The wider the BW, the 'faster' the "wiggles".

7 – DENSITY switch. Selects the number of VCOs used (2, 4 or 8). Note that the more VCOs you select, amplitude will automatically decrease so that there is no possible clipping when all the VCOs align. A setting of '2' will be louder overall than '4' or '8'.

8- 1V/OCT CV input. This set the fundamental pitch (when SPREAD = 0) of all the VCOs. There is a blue, multi-turn trim pot along the top edge of the pc board to set this precisely.

9 – FM CV input. Modulates the VCO fundamental pitch.

10 – SYNC input. A positive voltage exceeding +0.25V will place the E340 VCOs into 'hard sync (both outputs reset to -5V). The SYNC effect can sound rather interesting at higher SPREAD settings.

11 – SPREAD CV. This voltage is added to the panel SPEAD control.

12- CHAOS CV input. This voltage is added to the panel CHAOS control.

13 – CHAOS BW CV input. This voltage is added to the panel CHAOS BW control.

14 – SAW OUT. This output (10V pk-pk) is a DC-coupled addition of the VCOs (set by the DENSITY switch).

15 – SINE OUT. VCO sine waves instead of sawtooths.

General Info

Inputs: -5V to +5V, DC to 8KHz.
Outputs: -5V to +5V, DC to 10KHz
Power: +12V@55ma, -12V @25ma. For MOTM use: +15V @45ma, -15V@ 15ma.

Jumper options: The jumper options are not used but the E340 and are ignored.