

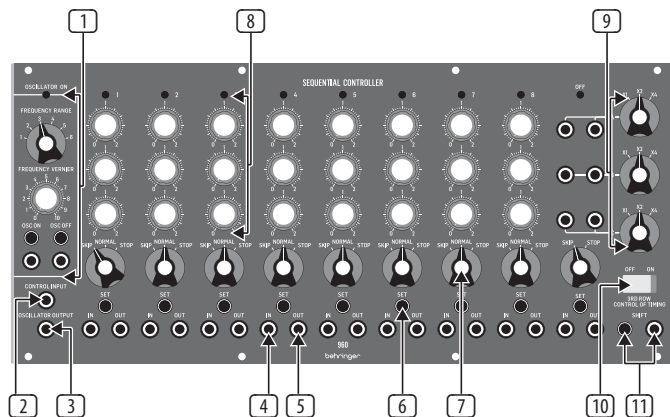
Quick Start Guide

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960 SEQUENTIAL CONTROLLER

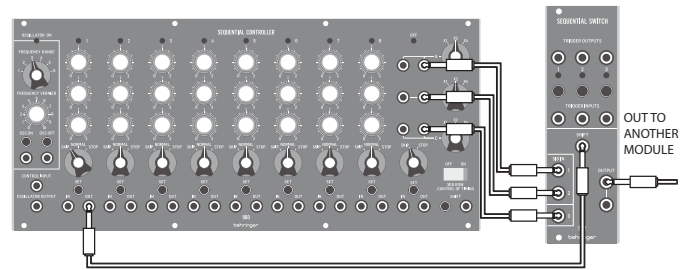
Legendary Analog Step Sequencer Module for Eurorack

Controls



- 1 **OSCILLATOR** - Select the broad oscillator range with the Frequency Range knob, and fine tune with the Frequency Vernier knob. Engage or disengage the oscillator manually with the OSC ON and OFF buttons, or connect external voltage trigger (V-trig) signals to control the on/off status.
- 2 **CONTROL INPUT** - Accepts voltage from another module to control the oscillator frequency.
- 3 **OSCILLATOR OUTPUT** - Send the oscillator signal via 3.5 mm TS cable.
- 4 **IN** - Activate any stage via an external voltage trigger (V-trig). Note that if a stage IN is patched to another stage OUT, it will cause the 960 to reset to stage 1, bypassing stages after the OUT jack.
- 5 **OUT** - Send the voltage trigger (V-trig) signal to another module.
- 6 **SET** - Manually activate a stage. In the event of a sequencing error, press any SET button to reset to a stage and restore normal operation.
- 7 **STAGE MODE** - In the Normal setting, the stage runs its cycle and proceeds to the next stage. Selecting the Skip setting will bypass the stage, and selecting Stop will stop the sequence. A 9th stage exists to continue the sequence (Skip) or Stop the sequence at stage 9 which makes the stage 9 output active. Whenever stage 9 becomes active, the oscillator is automatically turned off.
- 8 **VOLTAGE CONTROLS** - Adjust the voltage for each stage. The associated LED will light to indicate the currently-active stage.
- 9 **OUTPUT SECTION** - Send the voltage from the 8 stages to other modules. The outputs can be scaled with the associated knobs by a factor of 1, 2 or 4.
- 10 **3RD ROW TIMING** - Since many users will run the 960 as an 8-stage or 16-stage sequencer (via the 962 module), the 3rd row can alternatively be used to control the timing of each stage. Move the switch to the ON position and adjust each stage's 3rd knob to lengthen or shorten the duration.
- 11 **SHIFT** - Control the shifting via an external source or manually with the button.

24-Stage Operation



The main purpose of the 962 sequential switch module is to alternately select between the 3 output rows of the 960 to create a 24-stage sequence. Patch the trigger OUT jack from stage 1 into the SHIFT input of the 962. Patch the 3 output rows A, B, C from the 960 to the 962's 3 SIG inputs. Now the 962's output will be the 24-stage sequencer output, or leave out the C row patch cable for 16 steps.

Tuning Procedure

1. Power up the 960 module and press the OSC ON button. Allow the unit to warm up for a few minutes.
2. Prepare the following control settings:
 - a. Set the 3RD ROW CONTROL OF TIMING switch to off.
 - b. Set the FREQUENCY rotary switch to 6 on the scale.
 - c. Make sure no jack is connected to the oscillator CONTROL INPUT.
3. Set the FREQUENCY VERNIER for exactly 100 Hz at the OSCILLATOR OUTPUT measured with an accurate frequency meter and adjust the DUTY CYCLE ADJ for 90% duty cycle.
4. Fine-tune the 960 oscillator's high frequency scaling as follows:
 - a. Apply exactly +2.0 VDC to the CONTROL INPUT jack (A 921A module can be used to supply the +2.0 VDC or use a similar low-impedance stable-voltage source).
 - b. Trim the 960 SCALE ADJ trimmer to set 400 Hz, then remove the +2.00 V input and readjust the 960 FREQ VERNIER to 100 Hz.
 - c. Repeat this cycle until both 100 Hz and 400 Hz are accurate to ± 1 Hz when the +2.00 VDC is plugged in and out of CONTROL INPUT jack.
5. Fine-tune the 960 oscillator's low frequency scaling as follows:
 - a. Apply exactly -2.0 VDC to the CONTROL INPUT jack (A 921A module can be used to supply the -2.00 VDC or use a similar low-impedance stable-voltage source).
 - b. Trim the 960 LOW END ADJ trimmer to set 25 Hz, then remove the -2.00 V input and readjust the 960 FREQ VERNIER to 100 Hz.
 - c. Repeat this cycle until both 100 Hz and 25 Hz are accurate to ± 1 Hz when the -2.00 VDC is plugged in and out of CONTROL INPUT jack.



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