

Moog – Subharmonicon

- [Manual PDF](#)
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[Moog Subharmonicon User Manual PDF](#)

Moog Subharmonicon Eurorack Cheat Sheet

Type: Semi-modular analog polyrhythmic synthesizer (60HP Eurorack compatible)

Main Features:

- 2 VCOs (each with 2 subharmonics, 1-16 integer division undertones)
 - 4 Rhythm Generators (integer tempo divisions, create polyrhythms)
 - 2 x 4-step Analog Sequencers
 - Moog 4-pole Ladder Filter
 - Dual Envelope Generators (Attack/Decay, for VCF & VCA)
 - 32-point Patchbay (17 In, 15 Out)
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Quickstart

1. **Power:** +12V only, 360mA max (no -12V). See manual for safe installation.
2. **Audio Out:** 1/4" on the back, or `VCA OUT` on patchbay (Eurorack level, 10Vpp).
3. **Basic Flow:** Oscillators > Mixer > Filter > VCA > Audio Out.
4. **Rhythm Generators:** Divide master tempo by 1-16 (per generator), assign to sequencers for polyrhythms.
5. **Sequencers:** 4 steps per, pitch (and optionally integer division for subosc), assign to VCO, Sub 1, and/or Sub 2.

6. **Patchbay:** Use to break internal routing and integrate with external CV/midi/eurorack.
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Panel Controls

Knobs

- **VCO FREQ (1 & 2):** Oscillator frequency, 4 octave range (Middle C to C6).
- **SUB FREQ (x4):** Division from 1-16 (clockwise = unison, counter = /16).
- **Waveform Select (toggle, x2):** Square / PWM + Sub Saw / Saw.
- **Mixer Levels:** VCO 1, SUB 1, SUB 2, VCO 2, SUB 1, SUB 2.
- **CUTOFF:** VCF Cutoff, 20Hz–20kHz.
- **RESONANCE:** Self-oscillate at max.
- **VOLUME:** Main output level.
- **VCF EG:** ATTACK (1ms–10s), DECAY (5ms–10s), AMT (bi-directional).
- **VCA EG:** ATTACK (1ms–10s), DECAY (5ms–10s).
- **TEMPO:** .333Hz–50Hz (20–3000 BPM).

Buttons

- **SEQ n ASSIGN:** Assign step CV to VCO, Sub 1, and/or Sub 2.
- **Quantize:** 12-ET, 8-ET, 12-JI, 8-JI, OFF.
- **SEQ OCT:** ± 1 , ± 2 , ± 5 step range.
- **PLAY:** Sequencers on/off.
- **RESET:** Resets sequencers/rhythm.
- **NEXT:** Advances step.
- **EG:** On/Off/Held (Hold to tune with EGs open).
- **TRIGGER:** Manual envelope retrigger.

Rhythm Gen Section

- **RHYTHM (x4):** Integer clock divider [1–16].
- **SEQ 1 & SEQ 2 assign (x4):** Assign rhythm output to sequencers.

Patchbay Reference

Inputs (Normal text):

| Jack | Function | Range | |-----|-----|-----||
VCO 1 IN | VCO 1 1V/Oct pitch CV | -5V to +5V || VCO 1 SUB IN | CV
choose Sub 1/2 divisor | -5V to +5V || VCO 1 PWM IN | PWM Mod for VCO
1 & subs | -5V to +5V || VCA IN | VCA CV (volume) | 0V to +8V || VCO 2 IN |
VCO 2 1V/Oct pitch CV | -5V to +5V || VCO 2 SUB IN | CV choose Sub 1/2
divisor | -5V to +5V || VCO 2 PWM IN | PWM Mod for VCO 2 & subs | -5V to
+5V || CUTOFF IN | Filter cutoff modulation | -5V to +5V || PLAY IN | Play/
stop gate (rising/falling) | 0V to +10V || RESET IN | Sequencer/rhythm
reset/trig/hold | 0V to +10V || TRIGGER IN | EG trig input | 0V to +10V ||
RHYTHM 1–4 IN | Integer value, Rhythm (centered) | -5V to +5V || MIDI IN |
Mini-jack, Type A | – || CLOCK IN | External clock override | 0V to +10V |

Outputs (Reverse text):

| Jack | Function | Range | |-----|-----|-----||
VCA OUT | Main Eurorack level audio out | 10Vpp || VCO 1 OUT | VCO 1
audio/CV | 10Vpp || VCO 1 SUB 1/2 | Sub oscillator outputs | 10Vpp || VCO
2 OUT | VCO 2 audio/CV | 10Vpp || VCO 2 SUB 1/2 | Sub oscillator outputs
| 10Vpp || SEQ 1 OUT | Seq 1 CV out (follows quantize) | -5V to +5V || SEQ
1 CLK OUT | Seq 1 clock pulse | 0V to +5V || SEQ 2 OUT | Seq 2 CV out
(follows quantize) | -5V to +5V || SEQ 2 CLK OUT | Seq 2 clock pulse | 0V to
+5V || CLOCK OUT | Master clock (all sources) | 0V to +10V || TRIGGER
OUT | EG trigger pulse | 0V to +5V || VCA EG OUT | VCA envelope CV | 0V
to +8V || VCF EG OUT | VCF envelope CV | 0V to +8V |

Voltage Ranges

- **Pitch CV inputs (VCO 1/2 IN):** 1V/oct, -5V to +5V
- **PWM, Subharmonic, Rhythm inputs:** -5V to +5V
- **CUTOFF, VCA CV IN:** CUTOFF: -5V to +5V; VCA: 0V to +8V
- **Gate/Trigger/Reset:** 0V (low), +10V (high, trigger/gate)
- **Audio Outputs:** 10V peak-to-peak (Eurorack level)
- **Envelope Outputs (VCA/VCF EG):** 0V to +8V

MIDI & Other Notes

- MIDI input via included Type A minijack adapter: clock, note, CC messages (see manual for full CC list).
 - Supports just intonation and equal temperament quantization.
 - All functions can be decoupled from quantization/seq octave settings for advanced patching.
 - All internal routing can be overridden with patch cables.
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Links

- [Moog Subharmonicon Manual PDF](#)
- [Generated With Eurorack Processor](#)