

Doepfer – A-121-3

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[Doepfer A-121-3 12dB Multimode Filter Manual](#)

Creative Modulation Techniques with the A-121-3 Multimode Filter

The **Doepfer A-121-3 Slim Line 12dB Multimode Filter** is a versatile, compact module ideal for tight Eurorack setups. With simultaneous outputs for low-pass, high-pass, band-pass, and notch filtering, plus extensive modulation capabilities, you can sculpt a wide variety of sounds—from raw percussive hits to throbbing basslines or lush pads.

Below are modulation strategies tailored for three sonic goals: **distorted percussion, aggressive basslines, and atmospheric pads.**

1. Distorted Percussive Sounds

Key Techniques: - Input Overdrive:

Turn the `Level` attenuator beyond position 5 to drive the input into distortion. Send short, snappy envelopes (via an ADSR or Function Generator) to the audio input—try processed noise, sampled drum hits, or metallic clicks as sources. - **Dynamic Filtering:**

Patch a fast envelope to the `CV1` input (1V/oct with no attenuator). This rapidly sweeps the cutoff with each percussion trigger, emphasizing the attack. - **Resonance Modulation:**

Patch a separate envelope or a random stepped voltage (like from a Sample & Hold) to the `CQ` input to dynamically change resonance per hit. Extreme resonance can make sharp, 'ping'-like percussive sounds or even turn the filter into a self-oscillating, sine-like tone generator. - **Filter Output**

Varieties:

Experiment with using HP, BP, or Notch outputs instead of the standard LP for metallic or hollowed drum timbres.

Patch Example:

```
Envelope Out → CV1  
Different Envelope or S&H → CQ  
Percussive Sound (Drum/Noise) → In  
Filter Out (BP/N/HP/LP) → Mixer/VCA  
Level Attenuator → >5 for drive/distortion
```

2. Aggressive Basslines (Dubstep, Drum and Bass)

Key Techniques: - Envelope and LFO Interplay:

Use an envelope on `CV1` to create snappy filter plucks, while a slow or medium LFO on `CV2` (with `FCV2` attenuator) adds wobble or movement.

- Using Self-Oscillation:

Push resonance (`Q`) to maximum for self-oscillation, transforming the filter into a sine wave oscillator when there's no input—useful as a sub-oscillator layer. **- FM & Distortion:**

Send an audio-rate oscillator to `CV1` or `CV2` to frequency-modulate the filter cutoff for ring-mod or vocal-like tones; overdrive the input (`Level` high) for snarling or tearing bass. **- Output Blending:**

Use LP for classic bass, BP for punch, or blend together with a mixer for complex waveforms.

Patch Example:

```
Bass Oscillator → In  
Envelope → CV1 (pluck the cutoff per note)  
LFO → CV2 (wobble modulation, adjust FCV2 for depth)  
CV or Envelope → CQ (modulate resonance for growl)  
Level Attenuator → near/above 5 for saturation/distortion  
Filter Out (LP/BP/combination) → VCA → Output
```

3. Haunting, Atmospheric Pad Sounds

Key Techniques: - Slow Modulation:

Use extremely slow LFOs or S&H for subtle, shifting filter cutoff movement (patch to `CV2`, dial in depth with `FCV2`). - **Resonance Animation:**

Modulate `CQ` input with a random or cyclic slow LFO to create spectral movement in the resonance peaks for a ghostly, animated pad. -

Multimode Layering:

Simultaneously route LP and HP outputs to separate mixers/channels.

Blend for bandpass/notch-like textures or stereo effects. - **Underdriven Input:**

Keep the input `Level` below 5 for clean, dreamy tones or push it just over for a bit of organic warmth.

Patch Example:

```
Swirling Pad Source -> In  
Slow LF0 -> CV2 (filter sweeps, adjust FCV2 for subtlety)  
Different LF0/S&H -> CQ (animated resonance peaks)  
Mono or Poly Source -> In  
LP + HP/Notch Outs -> Stereo Mixer/VCA  
Level Attenuator -> below 5 for smoothness, above for mild dirt
```

Tips & Tricks

- **Use All Outputs:**

Simultaneously process LP, HP, BP, and Notch in parallel for complex textures or pseudo-stereo.

- **Resonance as Oscillator:**

With no input and Q at max, the filter self-oscillates—track it via 1V/oct on CV1 to use as a melodic sine source or to "ping" for percussive tones.

- **Feedback Loops:**

Patch one of the filter outs back into the input (possibly attenuated or through another effect) for screaming resonance or unstable chaos.

For deeper details, visit the full [Doepfer A-121-3 manual](#).

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