Klavis — Grainity VCF

- Manual PDF

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Klavis Grainity Granular VCF — Cheat Sheet

Overview

- **Dual VCF**: Analog, digitally-controlled **Granular VCF** + standard **Multimode VCF**; patch separately or combine.
- **Mix Output** provides blend of both filter sections, voltage-controllable with phase-invert.
- **Shared controls** for frequency (cutoff) and resonance (Q).
- **Granular section**: Pattern/"Structure" control, cycle Division, Phase/Track, Detect input for driving filter cycle by triggers or external oscillators.
- **Firmware updates** via audio file to Struct jack.

Front Panel Controls

Ctrl Name	Type	Description
F (Freq)	Slider	Master cutoff freq for both filters

Ctrl Name	Type	Description
Q	Slider	Master resonance for both filters (self-oscillates)
FM	Knob	Bipolar attenuator for FM CV, center = 0, R = +, L = -
FM (jack)	Input	Cutoff CV, ±5V
V/Oct (jack)	Input	1V/oct tracking input, ±5V
Q (jack)	Input	CV for resonance, 0–+5V
Q (knob)	Knob	Unipolar attenuator for Q jack
Mix (knob)	Knob	Blend multimode (left) ↔ granular (right) for Mix output; also CV-able
Mix (jack)	Input	Mix amount CV; summed ±5V with knob
Type	Button	Tap: select Multimode filter type (see below); Long press: toggle phase invert
Type LEDs	LED	Shows active filter type; flashes if phase invert is active
inv	Button	Long press: toggles Mix phase inversion

Granular Section Only

Ctrl Name	Type	Description
Struct (encoder)	Knob/ Button	Select structure (pattern); hold+turn = fast scroll

Ctrl Name	Type	Description
Struct (jack)	Input	±5V summed to Structure for voltage/ random sweeping
Div (knob)	Knob	Adjust cycle Division, increases step length in Structure
Div (jack)	Input	±5V summed to Div knob
Φ/Frq (knob)	Knob	Phase delay (Track OFF), or Transpose amount (Track ON)
Φ/Frq (jack)	Input	±5V Phase or Track amount CV
Track (button)	Button	Track ON: Φ/Frq = Transpose (musically quantized); OFF = Φ/Frq = Phase
Track LED	LED	Lit = Track mode ON
Detect (jack)	Input	Triggers/Audio to clock granular section (replaces auto-zero-crossing)
Display (3-digit)	Numeric	1st+2nd: Structure, 3rd: Division

Outputs

Ctrl Name	Type	Description
M.VCF (jack)	Output	Multimode VCF output
G.VCF (jack)	Output	Granular VCF output
Mix (jack)	Output	Blend of M.VCF & G.VCF (set by Mix knob/CV, phase invert possible)

Multimode Filter Types (M.VCF)

Filter	LED	Description
LP2	1	12dB/oct low pass
LP4	2	24dB/oct low pass
HP	3	24dB/oct high pass
BP	4	12dB/oct bandpass
BR	5	12dB/oct band reject
IN	6	Input only (bypass)

Voltage Ranges & Signal Levels

Jack	Range	Notes
Audio Input	±5V pp	DC coupled
Detect Input	≥300mV, AC coupled	Audio or trigger/gate input
CV Inputs	±5V	All CVs (Struct, Div, Φ/Frq, Mix)
Q Input	0 to +5V	For resonance
Outputs	±5V pp	Unity gain, open filter, no resonance

Usage Tips

- **Input audio**: Use simple/complex VCO, chords, additive, sync, or even drums/mixed music.
- **Detect input**: Feed separate VCO, LFO, trigger, or rhythm to clock granular structure for special effects (e.g. quantized filtering/ chops).
- **Structure**: Cycles through filter-phase patterns (2–8 step/user random); longer for more subharmonics.
- **Division**: Repeat each pattern step; for harmonics/rhythms, or slows down cycles.
- **Phase/Track**: Phase = flanging/chorus effects. Track = musical detuning/harmonic ratios.
- **Firmware Update**: Audio file to Struct jack, hold Track+Type while powering.

Quick-Start Patch Recipe

1. Patch VCO to **Input**, output to system from **Mix** out.
2. Use **Type** to select multimode filter flavor.
3. Try **Structure/Div/Track/Φ** for subharmonics, harmonics or rhythm.
4. Use **Detect** with VCO/gate for rhythmic or externally driven patterns.
5. Fade/blend between granular/"classic" filter with **Mix** knob or CV.

Reference Table: Jacks & Controls

Name	Type	Function / Range for CV/Audio
Input	In	Main audio, ±5V pp
Detect	In	Audio or trigs, >300mV AC
V/Oct	In	1V/octave, ±5V

Name	Type	Function / Range for CV/Audio
FM	In	Frequency mod, ±5V
Q	In	Resonance mod, 0–+5V
Struct	In	Structure selection, ±5V
Div	In	Division selection, ±5V
Mix	In	Mix balance CV, ±5V
Φ/Frq	In	Phase/track CV, ±5V
M.VCF	Out	Multimode out, ±5V pp
G.VCF	Out	Granular out, ±5V pp
Mix	Out	Both sections mixed/blend, ±5V pp
