

JOVE Eurorack Filter

80

Overview

The System80 JOVE Eurorack Filter is inspired directly by the unique multi-mode filter of the Roland Jupiter-6 Polyphonic Synthesizer. This filter had 3 modes: Low Pass, Band Pass, and High Pass. JOVE adds a fourth mode by tapping the output after 2 of the 4 cascaded filter stages to provide a 12 dB OCT Low Pass, similar to the topology of the switchable Low Pass Filter in the Jupiter-8. Please note that at low resonance the 12 dB Mode has a higher output than the other 3 modes. The output becomes increasingly attenuated as resonance is increased.

The original Jupiter-6 filter used a series of cascaded Operational Transconductance Amplifiers (OTA) implemented with the now obsolete IR3109. JOVE replaces the IR3109 OTAs with the very similar LM13700 OTA to achieve the original character of the Jupiter-6 filter.

Control Descriptions

A Frequency Control

Changes the Cutoff Frequency of the filter.

B Resonance Control

Adjusts the amount of feedback applied to the input of the filter.

C Frequency Modulation Amount 1

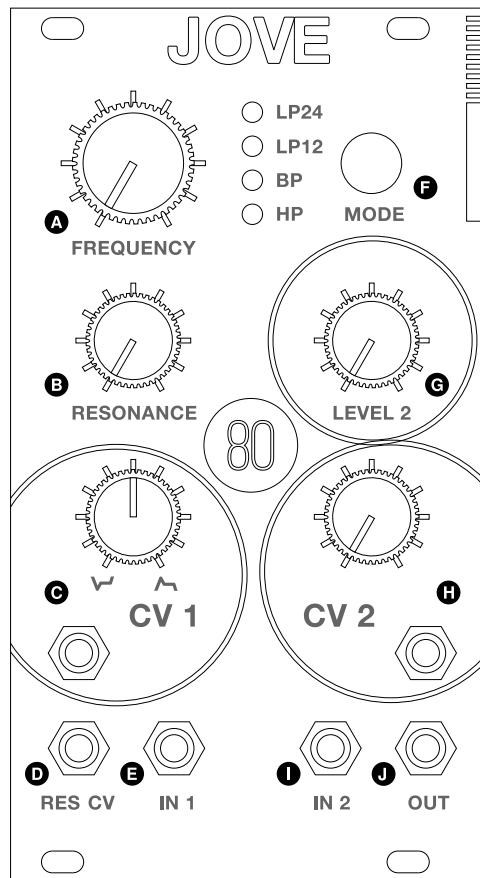
Adjusts the amount of Frequency Cutoff Control Voltage applied to the **CV 1** jack. Full attenuation at the centre position, positive modulation from centre to fully CW, and negative modulation from centre to fully CCW.

D Resonance Modulation

Non-attenuated Control Voltage input for modulation of filter Resonance.

E Filter Input 1

Non-attenuated Audio input to filter.



F Mode Selector

Use the Mode Selector to set the filter topology: 24 dB OCT Low Pass, 12 dB OCT Low Pass, Band Pass and High Pass. Pressing the MODE button cycles through the four filter Modes. The Mode resets to 24 dB OCT Low Pass on power up.

G Filter Input 2 Level

Adjusts the level of the audio applied to the **IN 2** jack.

H Frequency Modulation Amount 2

Adjusts the amount of Frequency Cutoff Control Voltage applied to the **CV 2** jack. Full attenuation when set fully CCW and maximum positive modulation when set fully CW.

I Filter Input 2

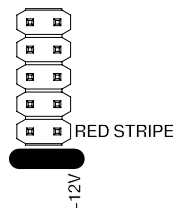
Audio input to filter. Attenuated by the **LEVEL 2** control.

J Filter Output

Filter Audio output.

Power Connector

JOVE uses a standard Eurorack non-shrouded non-keyed power connector and comes with a standard 10 pin Eurorack power cable. The Red Stripe on the power cable indicates the position of the -12V conductor. When connecting the power cable ensure that the Red Stripe end of the cable is aligned with the thick line next to the power header on the PCB. Connect the 10 pin connector to JOVE's power header and connect the 16 pin connector to your system's power bus board. JOVE is designed to withstand brief conditions of reverse power, but prolonged connection to reverse polarity may damage the protection diodes and require module servicing.



Please use care to avoid reverse polarity conditions.

Specifications

Power consumption: 15 mA +12 V, 10 mA -12 V
Frequency CV response: 0 V to +10 V
Frequency CV range: -10 V to +10 V
Resonance CV response: 0 V to +10 V
Input (typical): 10 V_{pp}
Output (typical): 6 V_{pp} to 12 V_{pp}
Width: 14 HP
Depth: 28 mm (incl. power connector)