Electrosmith 2144 Submodule

Contents

ES 2144

Voltage Controlled Low Pass Filter

The 2144 LPF provides smooth, analog low pass sounds via the reissue of the classic SSM2044 filter IC. This chip has provided the filter section for many famous poly synths. Tracks musical intervals and self oscillates when resonance is at max.

- Voltage controlled analog low pass filter
- Uses reissue of classic SSM2044 filter IC
- 4 pole architecture (24dB per octave)
- Tracks musical pitch intervals
- Self oscillates pure sine tone with resonance at max

Electrical Characteristics

The board is designed for:

V+ = +12V

V- = -12V

Powering off of different supply levels (+/-4V to +/-16V) is possible, but will have an effect on the maximum output amplitude of the filter.

Parameter	min	max	units
Frequency Range	16	16000	Hz
Frequency Pot Input	GND	+12	V
Frequency CV Input	-8	+8	V
Res Input	0	+12	V
Res CV Input	-5	+5	V

Pin Descriptions

1. GND

Ground Connection

2. Cutoff Pot

Controls the cutoff frequency of the filter.

Connect wiper of a potentiometer to this connection.

Wire pot between GND and Vcc.

No Passives necessary.

3. Cutoff CV

Controls the cutoff frequency of the filter.

Adds to the current pot position.

Expects a range of -8V to +8V.

Trimpot on submodule allows for tracking of musical intervals. (1V/Octave)

4. Cutoff Node

Summing Node connection for additional control signals.

Input Impedance for equivalent pot connection: 49K9.

Input Impedance for equivalent CV input connection: 47K.

5. Input 1

Audio Input 1.

Expects Modular Level signal (10Vpp).

6. Input 2

Audio Input 2 (slightly attenuated to avoid phase cancellation).

Expects Modular Level signal (10Vpp).

7. NC

No Connection.

8. Vee

Negative Supply Input.

Designed for -12V.

Functional between -4V and -16V.

9. Vcc

Positive Supply Input.

Designed for +12V.

Functional between +4V and +16V.

10. NC

11. Output

Modular Level Filtered Output .

12. NC

No Connection.

13. Resonance Node

Summing Node connection for additional control signals.

Input Impedance for equivalent pot connection: 200K.

Input Impedance for equivalent CV input connection: 100K.

14. Resonance CV

Controls the resonance of the filter.

Adds to the current pot position.

Expects a range of -5V to +5V.

15. Resonance Pot

Connect wiper of a potentiometer to this connection.

Wire pot between GND and Vcc.

No Passives necessary.

16. GND

Ground Connection

Example Schematic