

AI Synthesis AI017 Low Pass Gate

User's Manual

This is the Manual for the [AI017 Eurorack Low Pass Gate](https://aisynthesis.com/product/ai011-voltage-controlled-oscillator/) you can purchase it by going to:
<https://aisynthesis.com/product/ai011-voltage-controlled-oscillator/>.

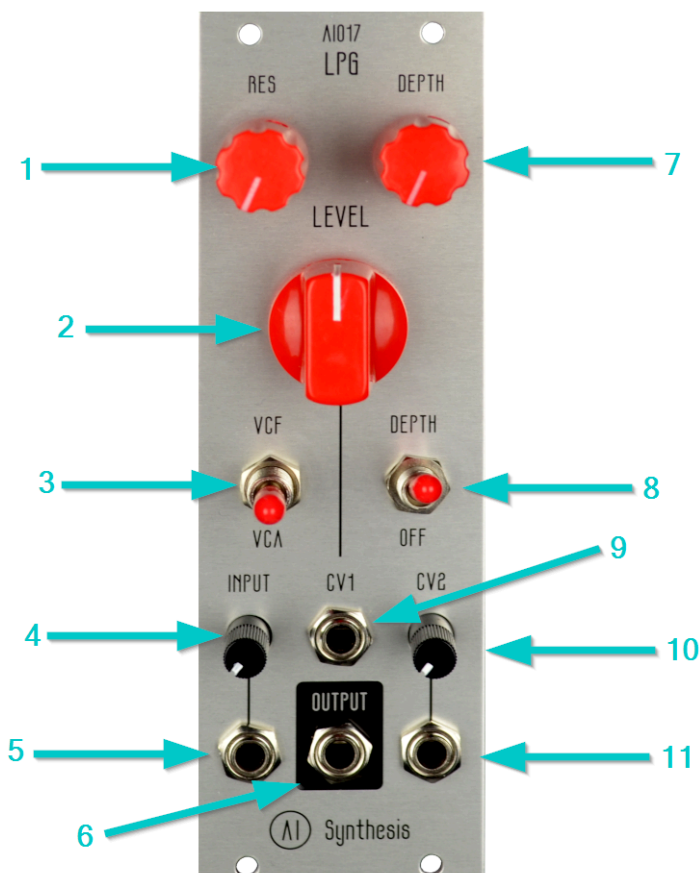
1. About the AI017 Low Pass Gate

If you are new to DIY electronics, an oscillator is not the first thing you should build. The first module, the [AI001 Multiple](#) is ideal for beginners, as it teaches how to solder and signal flow.

The AI017 Low Pass Gate Eurorack Module can be used as a Voltage Controlled Filter, Voltage controlled Amplifier, or both. The AI017 is an updated variation of the classic Buchla 200 Series Low Pass Gate, updated with a tunable resonance circuit, and a Depth control. Vactrols are used for control voltage, allowing for classic "ringing" and "bongo" effects.

The Depth control compensates the vactrols inability to drop lower than 100 ohms, which can allow audio bleed on traditional Low Pass Gates. The effect can be switched on or off, as depth will attenuate the classic ringing and bongo effect. This gives the user an easy way to go from a "vintage" Low Pass Gate to a "modern" Low Pass Gate with a flick of the switch. A rear trimmer allows for the tuning of the resonance.

2. A1017 Controls



1. Resonance. In VCF mode (not VCA/VCF - see control #3,) this knob controls the resonance of the Resonant Voltage Controlled Filter. Gain can be fine tuned to taste using the resonance trimmer on the back of the module.

2. Level. In VCA mode (see control #3), this knob sets the base level of the VCA. With no CV and set at 0, the VCA will be closed, turning it clockwise will open the VCA. Note that with Depth mode (Control #8) set to Off or On with the Depth Knob at 0 there may be some bleed, consistent with classic vintage Vactrol VCAs. It acts similar in VCA/VCF mode (Control #3). In VCF Mode, the knob controls the base cutoff, and controls at what frequency the filter allows low frequencies to pass. As the knob is turned clockwise, it allows higher frequencies to pass.

3. Mode Switch. This switch controls the "mode" of the module. When it is up it is in VCF mode and the module is a Resonant Low Pass Gate. In the middle it is a non resonant combination VCA/VCF, with

high frequencies being filtered as the VCA closes. In the Down mode the module is a VCA, with no filtering of high frequencies.

4. Audio Input attenuator. This knob passively attenuates the signal coming in at Input jack #5.

5. Audio Input. Plug audio signals (or CV, go nuts) into this jack to process them in the module. Short triggers can also be plugged in for classic "pinging" effects.

6. Output. Signal processed through the module is present at this Output jack.

7. Depth Knob. This knob has no effect unless the Depth Switch (#8) is Up. When active, the knob adds negative bias to the circuit, allowing the base level to go lower than normal. Why do this? Good Question. With Depth off, the circuit is a classic Low Pass Gate, warts and all, meaning that Low Frequencies can bleed through the vactrols. If you want to reduce bleed, Depth can be used to make the Low Pass Gate more modern and clean. You can also use it with the CV inputs to shape the sound.

8. Depth On/Off. When in the Up position, this switch allows the Depth Knob (#7) to allow negative bias to the signal. In the "Down" position, the Depth knob has no effect.

9. CV1 Input. This is an un-attenuated Control Voltage input that controls the Level of the module, depending on mode.

10. CV 2 Knob. This Knob is a passive attenuator controlling the voltage input into the CV2 jack (#11).

11. CV 2 Input. This is an attenuated Control Voltage input that controls the Level of the module, depending on mode. The signal is attenuated by the CV 2 knob (#10)

3. Power

The AI017 uses a shrouded header to prevent the cable being plugged in the wrong way. The unit draws 19mA on the positive rail, and 16v on the negative side.

5. Patch Ideas/Uses

Coming soon...