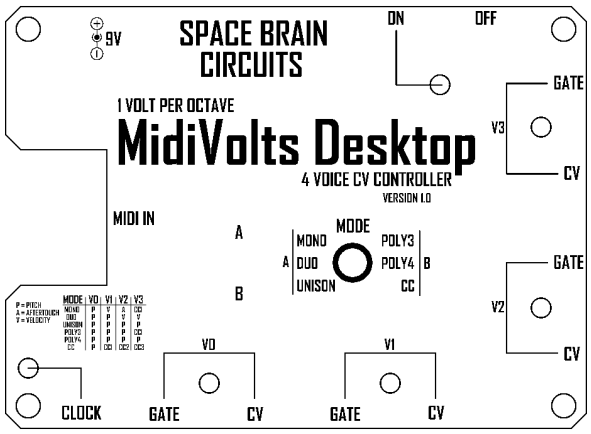
The **MidiVolts Desktop** is a MIDI based 5 octave CV controller. The device contains 4 separate CV outputs with an associated Gate output. These CV outputs are called voices, and are named **V0**, **V1**, **V2**, **V3**. Each voice operates on the 1 volt per octave standard for eurorack and most hardware synthesizers. The device uses 6 different modes (**MONO, DUO, UNISON, POLY3, POLY4, CC**) to control each voice in different ways. See below for descriptions of each Mode. The device also contains a Midi to Clock output conversion and further customizations with SysEx midi messaging. Firmware versions may also be upgraded and/or changed by **USB** connection.
Visit **github.com/spacebraincircuits/midivoltsdesktop** for all operations and guide.

MIDI IN Jack: Connect MIDI Controller/ keyboard MIDI OUT to the MidiVolts Desktop MIDI IN (**Channel 1**).

CV Jack: 3.5 mm jack used to output 1 V/Oct Control Voltages. Due to the outputs low output impedance (5Ω), multiple oscillators may be connected to any CV and retain precise voltages.

GATE Jack: 3.5 mm jack used to output a 5V Gate Signal when a note has been pressed. (IKΩ Output Impedance)

CLOCK Jack: The device will begin outputting clock pulses when it reads a Start/ Continue message.
Clock jack may be switched to act as a logic OR gate if desired. (IKΩ Output Impedance)



MONO: Monophonic Mode

Voice 0 (V0) is Pitch CV for the key pressed.
Voice 1 (V1) is Velocity of key pressed.
Voice 2 (V2) is Aftertouch of key pressed.
Voice 3 (V3) is CC1. Default: Mod Wheel.

DUO: Duophonic Mode

Voice 0 (V0) is Pitch CV for first key pressed.
Voice 1 (V1) is Pitch CV for second key pressed.
Voice 2 (V2) is Velocity of first key pressed.
Voice 3 (V3) is Velocity of second key pressed.

UNISON: Unison Mode

The purpose of this mode is to aid in the tuning of all connected oscillators.

Voice 0 (V0) is Pitch CV for the key pressed.
Voice 1 (V1) is Pitch CV for the key pressed.
Voice 2 (V2) is Pitch CV for the key pressed.
Voice 3 (V3) is Pitch CV for the key pressed.

POLY3: 3 Voice Polyphonic Mode

Voice 0 (V0) is Pitch CV for the first key pressed.
Voice 1 (V1) is Pitch CV for the second key pressed.
Voice 2 (V2) is Pitch CV for the third key pressed.
Voice 3 (V3) is CC1. Default: Mod Wheel.

POLY4: 4 Voice Polyphonic Mode

Voice 0 (V0) is Pitch CV for the first key pressed.
Voice 1 (V1) is Pitch CV for the second key pressed.
Voice 2 (V2) is Pitch CV for the third key pressed.
Voice 3 (V3) is Pitch CV for the fourth key pressed.

CC: Continuous Control Mode

Voice 0 (V0) is Pitch CV for the key pressed or CC0 if assigned by SysEx.
Voice 1 (V1) is CC1. Default: Mod Wheel.
Voice 2 (V2) is CC2. Default: 74.
Voice 3 (V3) is CC3. Default: 71.

9V DC Jack: DC power supply not included. 2.1 mm barrel plug **(Center Positive)**

DIV Switch: Determines which Mode is used to operate MidiVolts Desktop. Options selectable by first choosing which column the Mode will access, as assigned by the **A | B** switch.

Voice Allocation: The MidiVolts Desktop's key-assignment behavior can be changed depending on playing style and the gear being used. The available options are Normal (Default), Round Robin, and Pitch Order, assignable by SysEx. If more keys are pressed than allowable voices, the most recent pressed key will overwrite the previous, even if this key is still being held.
Normal (Default): Normal mode allows the MidiVolts Desktop to be used on devices with fewer VCA's than oscillators. When using the device in one of the Poly modes, the device will assign all oscillators to the pitch of the first note pressed. As more notes are pressed, the remaining oscillators will be reassigned until each oscillator is assigned an independent pitch.
Round Robin: Each key press is assigned to the next voice, cycling though all voices evenly.
Pitch Order: Voices are assigned according to note pitch, with lower notes routed to lower-numbered voices.

Voice Offset: Voice Offset allows the MidiVolts Desktop to ignore the first set of incoming notes and begin generating a response only after those notes have been consumed by another synthesizer. This means your paraphonic synth handles the first voices, while the MidiVolts Desktop picks up the additional voices afterward. This makes it ideal for adding extra voices to existing paraphonic setups without interfering with the synth's own internal voice allocation.

The following may be adjustable with Midi SysEx messages.
Midi Channel : 1 - 16 **CV Gain**, **CV Offset** : These are adjustable per voice. **PPQN:** Change ppqn of clock division. **Pitch Bend Up**, **Pitch Bend Down** : Specify the number of semitones. **Voice Allocation:** Normal (Default), Round Robin, or Pitch Order. **Voice Offset:** Offset operation by number of midi notes played: 0-8 (Default: 0—none)
Hold Gate For Release: Gate is retained if all notes are released at same time.

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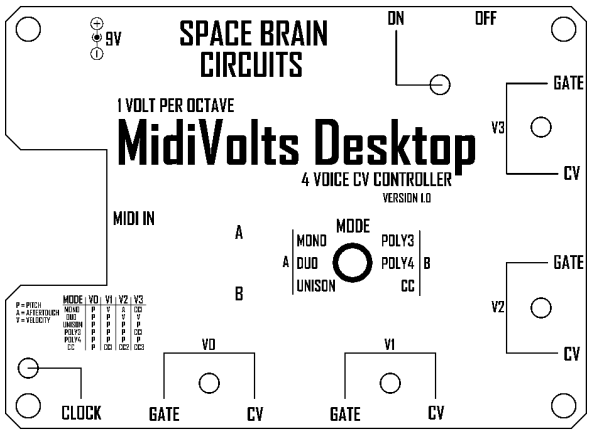

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POLY3: 3 Voice Polyphonic Mode

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Voice 2 (V2) is Pitch CV for the third key pressed.
Voice 3 (V3) is CC1. Default: Mod Wheel.

POLY4: 4 Voice Polyphonic Mode

Voice 0 (V0) is Pitch CV for the first key pressed.
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USER MANUAL

4 VOICE CV CONTROLLER

MidiVolts Desktop

SPACE BRAIN CIRCUITS

SPACEBRAINCIRCUITS@GMAIL.COM

IMPORTANT SAFETY INSTRUCTIONS

Read and follow all instructions before use.

- Do not expose this product to rain, moisture, excessive heat, and direct sunlight.
- Use a 9V DC Power Supply or an approved equivalent (Center Positive 9V DC 1000mA).
- Do not open or attempt to service the device yourself. No user-serviceable parts inside.
- Disconnect from power before cleaning. Use a dry, soft cloth only.
- This device is intended for use with musical instruments and audio equipment only.
- Do not attempt to open, modify, or service this product yourself.
  - Risk of electric shock or damage.
  - Service should only be performed by qualified personnel.
- Disconnect from power if the product will not be used for a long period.
- Dispose of the product according to local electronic waste regulations.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This product has been tested and found to comply with the following directives:
EMC Directive 2014/30/EU (EN 55032, EN 55035, EN 61000)
Low Voltage Directive 2014/35/EU (EN IEC 62368-1)
RoHS Directive 2011/65/EU
WEEE Directive 2012/19/EU

USER MANUAL

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