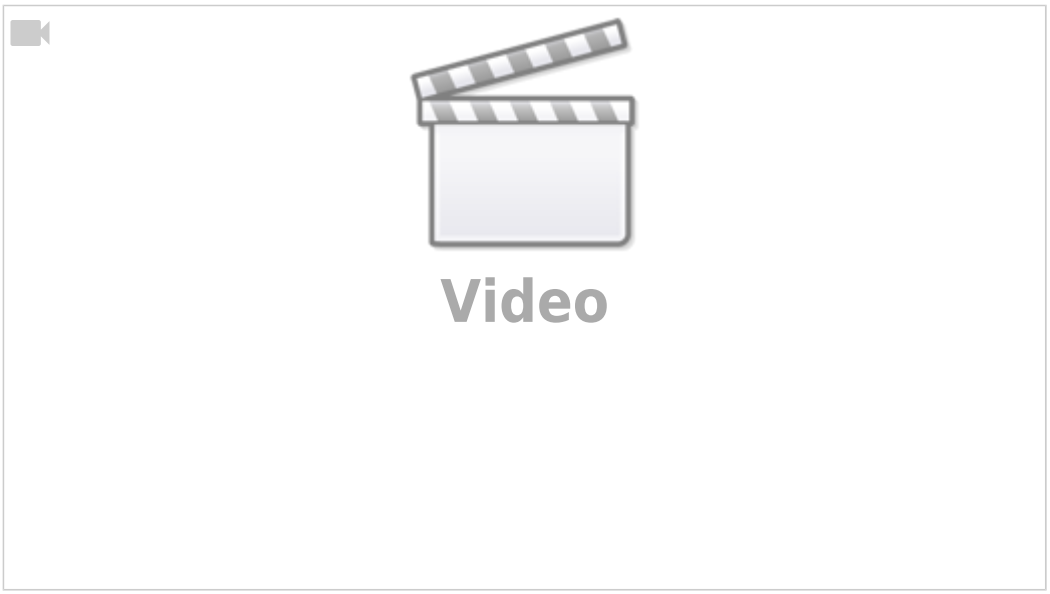
MIDIbox CV V2

Introduction

MIDIbox CV V2 is the successor of MIDIbox CV V1 with focus on digital, high-resolution modulation of CV outputs and an enhanced control surface.

Official Ucapps Page

Video Demo



Control Surface Features

- a “Standard Control Surface” (SCS), compatible to various other MIDIbox projects, which gives (a cumbersome) access to all parameters.
- the display used for the SCS can either be a 2×20 character LCD (CLCD), or a 128×64 graphical LCD. The graphical LCD will also print a scope!
- support for 4 OLEDs which are used as scopes! CV channels can be assigned to the scope displays individually. Selectable oversampling rate and trigger level.
- all parameters are also bidirectionally accessible via NRPN, this is demonstrated by a sophisticated Lemur template, running on an iPad. A PC/Mac based solution (e.g. based on Ctrlr) is feasible as well
- user configurable buttons (up to 32)
- user configurable rotary encoders (up to 16)
- optional LED rings for encoders

Control Voltages Features

- Typically 12bit outputs with common MBHP based AOUT Module. Internally working with 16bit

- Volt/Octave (positive and negative) and Herz/Volt characteristic
- Configurable slew rate to “smooth” the output curve (e.g. if controlled only by 7bit CCs)
- Selectable MIDI port (USB/MIDI/OSC), can also listen to multiple ports
- Selectable MIDI channel and keyboard range (if it listens to MIDI notes)
- Can listen to MIDI Note, Velocity, Aftertouch, CC, NRPN (14bit), PitchBender (14bit)
- Portamento, Glide, Glissando
- Octave Transpose, Semitone Transpose, Finetune, Pitch Range for incoming PitchBender events in MIDI Note mode.
- Legato, SusKey (fingered portamento)
- Poly chain mode to combine multiple CV for controlling multiple VCOs
- Arpeggiator with Up/Down/Up&Down, Random, etc. modes. Options: Sort, Sync, Oneshot, Constant Arp Cycle rate, Easy&Expert play, Speed and Gatelength.
- 303-like Bassline Sequencer with up to 32 steps and 8 sequences. Supports also Glide and Accent
- 2 LFOs with Amplitude, Rate, Delay, Phase and predefined modulation targets CV output, LFO2/1 Amplitude, LFO2/1 Rate, ENV1/2 Rate.
- Various waveforms such as Sine, Saw, Pulse, Random, Positive Sine/Saw/Pulse, etc. Works in “slow” (0.008..44 Hz) and “fast” mode (up to 440 Hz). Supports also Key Sync, MIDI Clock Sync and Oneshot
- 1 simple ENV with Amplitude, Delay, Attack, Decay, Sustain, Release and predefined modulation targets CV output, LFO2/1 Amplitude, LFO2/1 Rate,
- Supports Linear and Exponential curve.
- Works in “slow” and “fast” mode. Supports also Key Sync, MIDI Clock Sync and Oneshot.
- 1 multi-stage ENV with Amplitude, Offset, Rate, 16 steps with selectable loop and sustain step and predefined modulation targets CV output, LFO2/1 Amplitude, LFO2/1 Rate.
- Supports Linear and Exponential curve.
- Works in “slow” and “fast” mode. Supports also Key Sync, MIDI Clock Sync and Oneshot.
- 4 Modulation Matrices with two sources (incl. constant values), two destination paths (invertable), and operations such as +, -, multiply, XOR, OR, AND, MIN, MAX, <, >, Equal, Sample&Hold

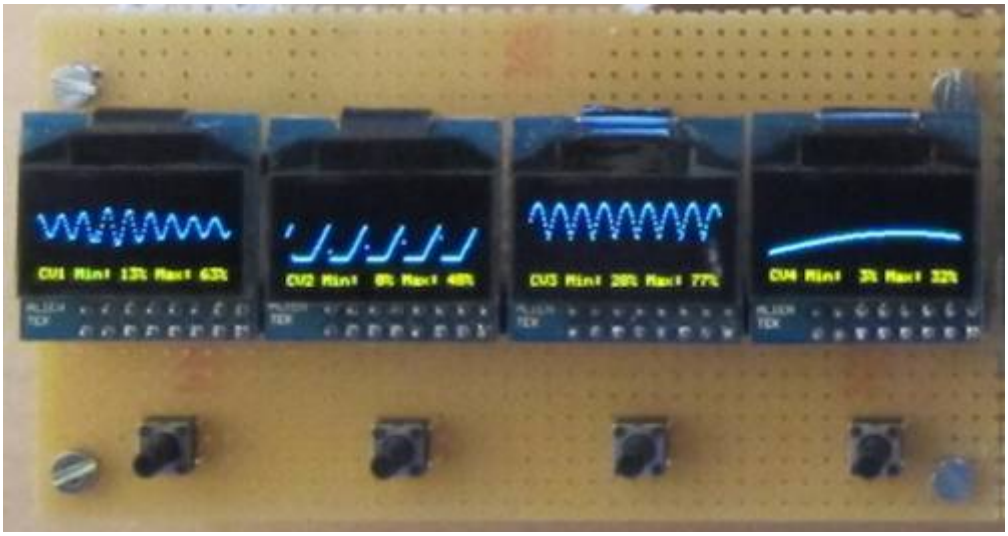
MBHP Modules Required

- Core32 STM32F4
- Aout Module or Aout_ng Module
- Ainser8 Module
- Din Module
- Dout Module
- SCS Module

Options

Scope Display

Up to 4 SSD1306 based “scope displays” can be connected to display CV output waveforms with a selectable oversampling rate and trigger level



Core32 STM32F4 Interconnection

Led Rings Encoders

Up to 32 free assignable rotary encoder functions with support for LED rings are available. The encoders have to be connected to a MBHP_DIN module, the LED rings to four shift registers of a MBHP_DOUT module.

Led Rings Encoders Wiki Page