

# CV-1

CV-Recorder/Looper & CV-Generator

Control Voltage Recorder, Looper, and Generator - for a own Eurorack-Line... more in Future!



-this picture is the first prototype - pre-Eurorack



## Features

- \* A Envelope which can be Recored from an AIN-Source, it can be Editet on Startpoint,ATK-Playbackrate, Decay-Playbackrate
- \* LFO which Waveform is stepless morphable from Sine Square Tri Saw-Up to Saw-Down...(only Clocksynced!)
- \* MSQ MotionSequencer to loop a CV-Signal.
- \* A Mixer Page which Mixes/Mutes ENV+LFO+MSQ - and scales the output CV
- \* Copy, Paste, Clear: to Transfair the CV Sequence to other CV1 Instances
- \* ProgramChange Load and Store on microSD-Card, Load and Store are CC-Commands, so you can remote the device
- \* The Sequencer can be set to Tact Systems: 3/4 4/4 5/4 7/4 9/4 11/4 13/4

## Hardware Requirements

### Midibox:

- [dipcoref4](#) - this is the  $\mu$ C Brain for CV1
- no other PCBs needet - but expandable with other Eurorackmodules in Future

- µSD-Card, formatted with FAT32
- Soldering Iron - with a Dip that can Handle SMD-Parts, Wires, solder Paste for the µC....
- Eurorack Power Source +-12V AND +5V!

## Set

### Cabeling

Midi IN1 »> CV1 Remote Device or a Midi-Sequencer

Midi OUT »> to a Global CV1 Remote Device  - which will need a lot of Midiinputs [M16?](#)

- @JMidi1: connect your Sequencer to get Midiclock and Programchanges
- @JAIN1: 2 CV Inputs - 12V tollerant
- @JAUT3: 1 CV Output - (internal DAC with Protection Cirtuit > 12V Tollerant)
- @J19: Get up to 8 CV-Outputs, with a [AoutNG](#)
- @JLCD1: up to 4 Additional OLED-Displays (decidet Reset Lines - so no additional Circuit needet)
- @J89: DIN and DOUT Shiftregister Chain: thought for decidet Expander Modules (which will come in near future)
- @J2/Bootload: If the core is not starting up - because of bad-Firmware, then bridge this Jumper to come into the Bootload-Mode

## Software

### Firmware



Firmware not made yet

## Building

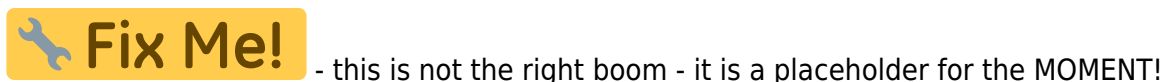


## Frontpanel



## Case

## BOM



| Ref   | Qty | Value                  | Footprint                | MouserPart           |                        |
|---|-----|------------------------|--------------------------|----------------------|------------------------|
| C1 - C7                                     | 7   | 100nF                  | 0603 Capacitor           | 81-GRM33C71C104ME14D | <a href="#">Mouser</a> |
| Rec-1 - Rec-4, UI-5 UI-4, led1, -1 -2 -3 -4 | 11  | REC, LED, beat, CC-IN, | 0603 LED                 | 630-ASMT-RR45-AQ902  | <a href="#">Mouser</a> |
| 1-16 (LED-BAR)                              | 64  | bar                    | 0603 LED                 | 755-SMLEN3WBC8W1     | <a href="#">Mouser</a> |
| D64 D65                                     | 2   | 1N-4148                | 1206 Diode               | 833-1N4148W-TP       | <a href="#">Mouser</a> |
| PTC1  | 1   | Thermistor_PTC         | 1206 Resistor            | 576-1206L150THWR     | <a href="#">Mouser</a> |
| R1, R2, R19 - R34                           | 18  | 10K                    | 1206 Resistor            | 603-AC0603FR-0710KL  | <a href="#">Mouser</a> |
| R3 R5 R6 R7 R8                              | 5   | 47                     | 1206 Resistor            | 603-RC0603FR-0747RL  | <a href="#">Mouser</a> |
| R9-R14, R36, R37                            | 8   | 220                    | 1206 Resistor            | 603-RC0603FR-07220RL | <a href="#">Mouser</a> |
| R15 R16                                     | 2   | 1K                     | 1206 Resistor            | 603-RC0603JR-071KL   | <a href="#">Mouser</a> |
| R17 R18                                     | 2   | 4K7                    | 1206 Resistor            | 603-RC0603FR-074K7L  | <a href="#">Mouser</a> |
| OUT1  | 1   | Midi                   | DIN-8-SDF-80J            | 490-SDF-80J          | <a href="#">Mouser</a> |
| M1  | 1   | DIPCORE32_CMPNT_48P    | 517-929870-01-20-RA      | DIP-40               | <a href="#">Mouser</a> |
| S8  | 1   | Shift                  | DT6                      | 611-D6R00F1LFS       | <a href="#">Mouser</a> |
| S1 - S4                                     | 1   | Part1                  | 611-SERWHAUOA            | DTL2-1-LED           | <a href="#">Mouser</a> |
| S5 - S7, S9 - S10                           | 6   | X,C,V,Len,Pre,Tac      | 611-SERRDAUOA            | DTL2-1-NO-LED        | <a href="#">Mouser</a> |
| ENC1  | 1   | ENC_BOURNS_PEC11       | ENC_BOURNS_PEC11+SW      | 652-PEC11R-4215F-S24 | <a href="#">Mouser</a> |
| IN1 IN2                                     | 2   | Midi                   | Midi-Socket-MAB5SH-DIN-5 | 566-MAB5SH           | <a href="#">Mouser</a> |
| Foot1                                       | 1   | Pin                    |                          |                      |                        |
| J2  | 1   | BootLoad               |                          |                      |                        |
| AIN1  | 1   | PIN                    |                          |                      |                        |
| U1 U2                                       | 2   | 6N136                  | SMDIP-8_W11.48mm         | 782-6N136-X009       | <a href="#">Mouser</a> |
| -595  | 3   | 74HC595                | SO-16-N                  | 621-74AHC595S16-13   | <a href="#">Mouser</a> |
| U3 U4                                       | 2   | 74LS165                | SO-16-N                  | 595-SN74LS165ADR     | <a href="#">Mouser</a> |

| Ref | Qty | Value          | Footprint | MouserPart         |                        |
|-----|-----|----------------|-----------|--------------------|------------------------|
| M2  | 1   | μSD_DM3ATDM3AT | MSD_DM3AT | 798-DM3AT-SF-PEJM5 | <a href="#">Mouser</a> |

## To Do

a housing/case or frontplate

## Resources

# Community users working on it

- [Phatline](#) = Programming, Documentation...

Just let a Private message on the forum to user already involved.

I have 10 ProtoBoards here - i test one, and if it works, i can share them for Beta Testing-if you pay the postage

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Last update: **2020/12/31 01:22**

