



*Update thing out there*

A place to catalogue analogue drum experiments, clonings, mods, hacks, bends, MIDIbox integration, specialised drum sequencers, MBSEQ firmware, SID as drum machine, triggering, E-Drum heads etc etc etc.

## Related pages on this wiki and ucapps.de :

**Midibox 606re** - a re-edit of TR-606 CYM/HH/BD/SD parts

**MIDIBox SEQ v2** - a simple control surface can be built with 16 LEDs/switches and one encoder (according to the SEQ Drum Mode tutorial below), and still have full access to this [amazing sequencer engine](#). Up to 48 separate MIDI drum note assignments x 16 steps.

Can also take an [AOUT module](#) for [up to four](#) CVs outs. The DOUTx4 expansion mentioned under MIDIO128 below could possibly be coded in.

With added code, a LED matrix to display all drum patterns simultaneously may also be possible, as in the [Simmons SDS6](#). Moxi has already implemented a 4x16 button/LED matrix, and TK has indicated up to 1024 may be possible (in MIOS, not necessarily in the SEQ). [4x16 LED matrix wiring](#) - **PDF**. Also see the [Sparkfun](#) parts listed below.

**MIDIO128** - up to 128 on/off signals and 128 input switches from one core. Useful for a simple fixed velocity MIDI to trigger/gate converter, sequenced from other equipment or software. A user adaption has added a [DOUTx4 module](#) for another 32 fixed velocity trigger outs.

**MIDIBox CV** - 8 gates and 2 analog CVs per AOUT module. Could be adapted for velocity triggers?

**TR Sequencer** - Discussion on the classic Roland TR-x0x drum sequencer user interface

**DSEQ32** - mess's 32 step 8 track drum sequencer

**MIOS Downloads** - Code examples for:

- \* 8 CV outputs with the MBHP\_AOUT module
- \* button matrix of  $8 \times 8 = 64$
- \* 64 CV INs and OUTs
- \* 64 pots, 128 buttons, 128 LEDs
- \* velocity buttons (e.g. for drumpads)
- \* MIDIBox SID - steal matrix code
- \* MIDIBox SEQ

## Forum topics:

[MIDIBox SEQ Drum Mode](#)

[MIDIBoxSID as drum machine](#) - sounds like [this!](#)

[Analog drum modules](#) - cloning and triggering them - the thread that started it all

[Moogah's 808/909 clone](#)

[Beginner's 16 step SEQ project](#)

[Alternative sequencer firmware](#)

[MB SEQ with button matrix?](#)  
[SEQ with 4x16 buttons and LEDs](#)  
[16x16 button matrix](#)  
[4x16 LED/button matrix](#)  
[using scan matrix together with led matrix? - Success!](#)  
[MB-SEQ LED-Matrix in Firmware aktivieren](#) - auf Deutch or [in Google English](#)  
[Diode matrix input](#) - large matrix with MIDIO128  
[80 LEDs from one CORE](#)

## Other resources

[V-Trig, S-Trig and Gate](#) - from Wikipedia  
[Gates and Triggers, Mystery Solved](#) - from synthesizers.com  
[PIC MIDI programming](#) - getting started  
[VC LFO and ADSR on PIC 16s](#) - cloning analogue LFO and ADSR with PICs.

### Drum pads and EDrums

[A good piezo pad design](#)  
[EDrum For Free](#) - great DIY site, heaps of designs for pads, triggers, pedals, hats etc

### Yahoo Groups

[TR-707](#) - Service manual, schematics, mods: you'll need to join to access files.  
[Drummachine](#) - moderator approval to join  
[Roland Drum Machines](#)  
[rolandtr505](#)  
[Simmons\\_Drums](#) - schematics and service manuals galore  
[Circuit Bending](#) - just a list of search results

## Useful Parts

### RGB Matrix

[Sparkfun Electronics](#) have an [8x8 RGB LED Matrix](#) with an SPI serial controller attached for \$59.95. Red/Green version \$34.95, matrix only small \$4.95 large \$29.95. The serial controller backpack contains a reprogrammable AVR ATmega8 microcontroller, which bumps up the value equation and opens a world of possibilities, such as LED sensors.

### 4x4 lighted key matrix

According to [this forum thread](#), [Sparkfun](#) will also soon be offering "silicone illuminated buttons ... 4x4 arrays that will cost between \$20 and \$30 U.S ... with 5mm holes for our tri-color LEDs."

### High power shift register

[Shift register 8 bit high power](#) - serial in, 8 pins out at up to 50V/150mA each. \$1.95. Sparkfun again :) This would be handy for triggering modules that expect more than +5V as from a DOUT.

### Schematics:

[S-Trig to V-Trig converter](#) - also see below. 505/707 internal triggers are S-Trig.

[V-Trig to S-Trig converter](#) - different one below

[Simple switch/trigger with transistors](#) - ground switch with NPN or +ve pulse with PNP. The example given uses a PC parallel port and the [BendControl](#) Win95 sequencer

[Arista Drum machine](#)

[SynthOllie's scans](#) - Boss PC-2 Percussion with noise generator mod, Boss handclap, Casio VL-1, clap, synbal, synclap, syntom II.

[Matrixsynth blog entry](#) - where I got the link to synthollie and also a SynTom II and Cymbal II Zip file.

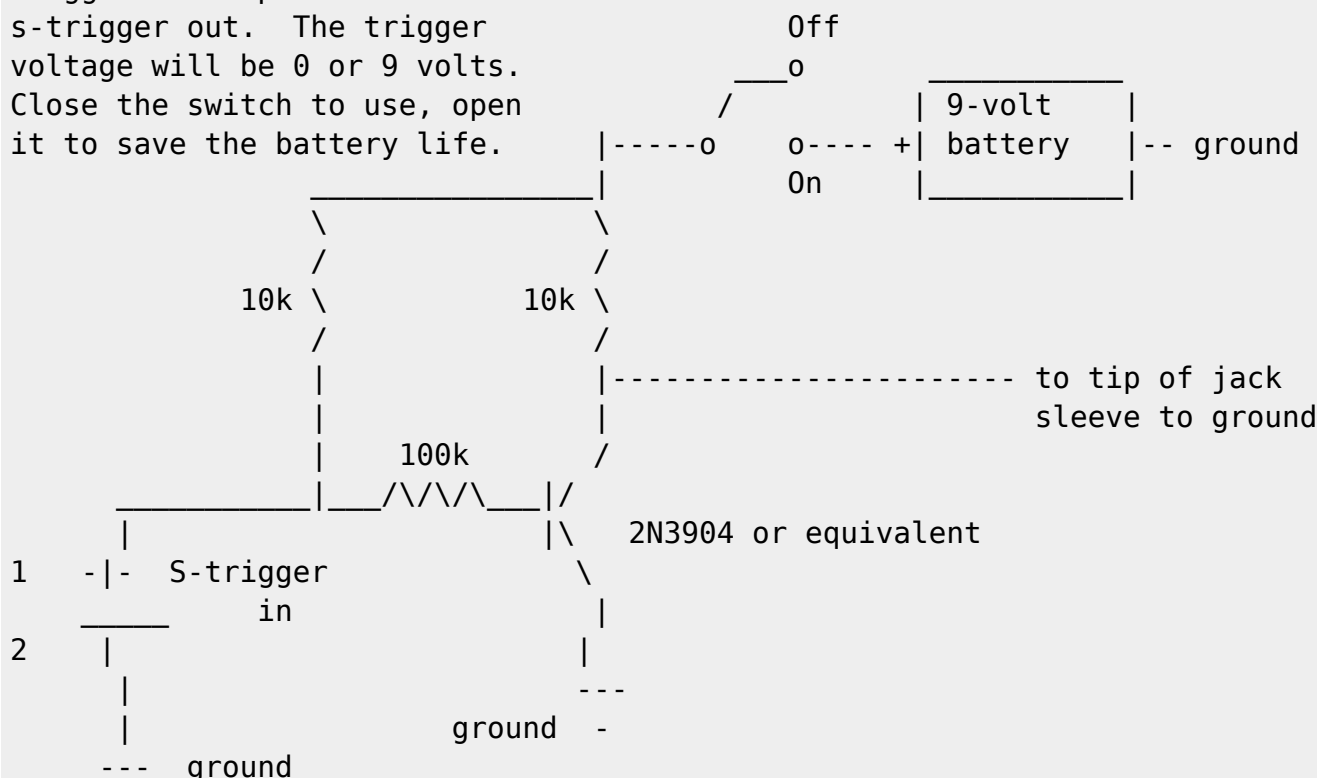
[Papareil Synth Labs](#) - Coron Drum Synth clone schematics, also lots of other FX and synth modules, MIDI projects, etc.

#### Roland TR-505 8x trigger out mod

- R80 - Kick
- R75 - Snare
- R2 - Clap/Rim
- R69 - Cowbell
- R68 - Conga
- R63 - Hats
- R62 - Ride/Crash
- R60 - Toms

#### S-Trig to V-Trig converter

This will produce a voltage trigger in response to an s-trigger out. The trigger voltage will be 0 or 9 volts. Close the switch to use, open it to save the battery life.



#### V-Trig to S-Trig (another)

