

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.

# Related pages on this wiki and ucapps.de:

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 seperate 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  $4\times16$  button/LED matrix, and TK has indicated up 1024 may be possible (in MIOS, not necessarily in the SEQ).  $4\times16$  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 SEO

## 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?

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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.

#### 4×4 lighted key matrix

According to this forum thread, Sparkfun will also soon be offering "silicone illuminated buttons ... 4×4 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.

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#### **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

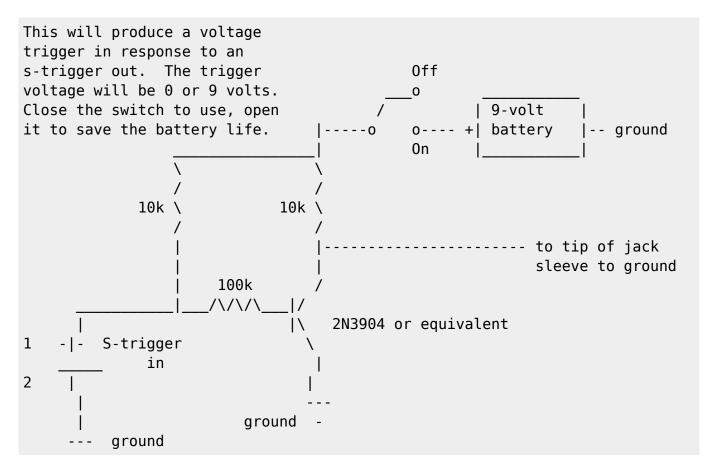
SynthOllie's scans - Boss PC-2 Percussion with noise generator mod, Boss handclap, Casio VL-1, clap, synbal, synclap, syntom II.

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



# V-Trig to S-Trig (another)

The circuit that I have is very simple. One VMOS FET (something like the VN10KM). No power, nothing...

it's something like:

where G, S, and D stand for Gate, Source and Drain - and I may have them mixed up, coz I'm doing this from a bad memory)

## To do:

- \* MBFM drums (duh)
- \* Jamaroonies
- \* 505/707 as trigger source
- \* LED matrix

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