



# CODE, FIRMWARE

## 1. Upload MIOS Bootloader

## 2. type following commands into the MIOS-TERMINAL:

- set lcd\_type GLCD\_SSD1306\_ROTATED
- set lcd\_num\_x 9
- set lcd\_num\_y 1
- set lcd\_width 128
- set lcd\_height 64
- store

## 3. Upload the Triggermatrix Code:

the Code  upload TM4 Code

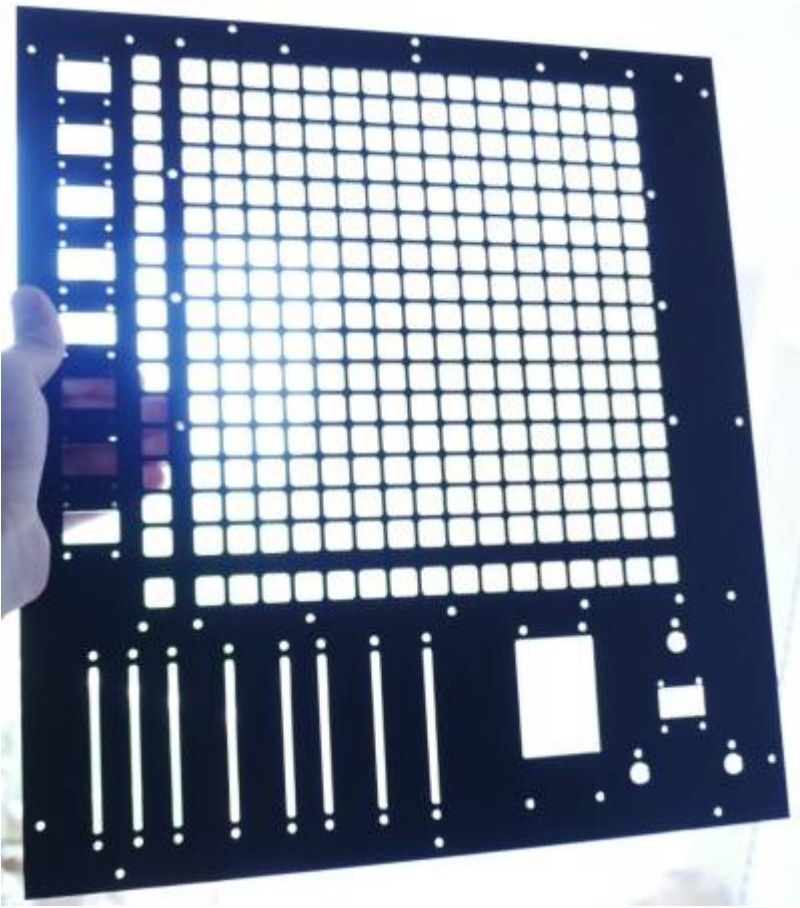
# BUILD

## BOM, Components, PCBs

- [BLM16x16x, not longer produced anymore...](#)
- [CORE32 STM32F4](#)
- [2x Midi IO](#)
- [DINX4](#)
- [8x 10K Lin, Faders](#)
- [6x Fader-Knob, BLACK](#)
- [2x Fader-Knob, WHITE](#)
- [9x Switches](#)
- [3x Encoder](#)
- [9x OLED-Displays 128x64px 0,96"](#)
- [108x M2 Nuts](#)
- [36x M2 Screws](#)
- [20x Crimpable connector, 2x5 Pole](#)
- [5x Crimpable connector, 2x8 Pole](#)
- [1x 26Pole Wire](#)
- [1x Boot-Switch for Bootload-Mod](#)
- [3x Encoder Knob](#)
- [Full Sized SD-CARD, which is not Hi-Capacity, eg take 4 or 8GB Cards!](#)
- [2x Wood: 15 x 400 x 39mm, or > 16 x 400 x 39mm \(39mm is minimal, i took 40mm...\)](#)
- [1x Wood: 15 x 335 x 39mm, or > 16 x 333 x 39mm \(39mm is minimal, i took 40mm...\)](#)
- [3mm Alu Plates for Ground and Backpanel \(you cut and drill it by your own\)](#)
- [3mm Alu Frontpanel, CNC-machined \(See DXF-File for more info\)](#)

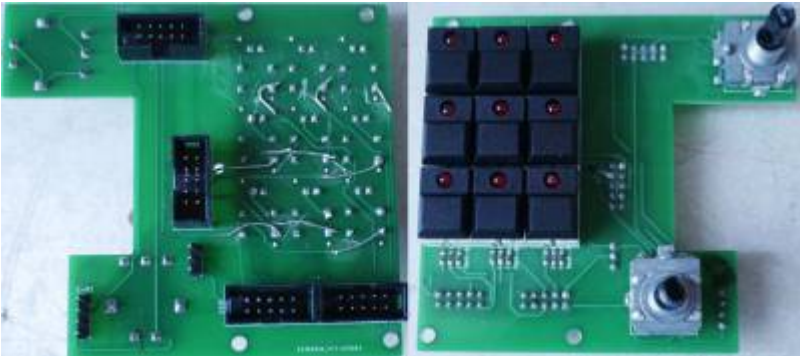
## Pictured Doku

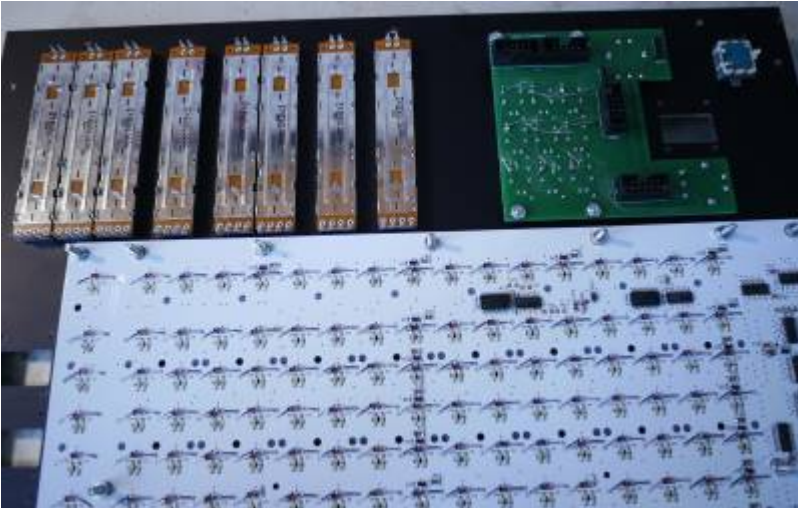
### BLM16x16





**Code-Block**

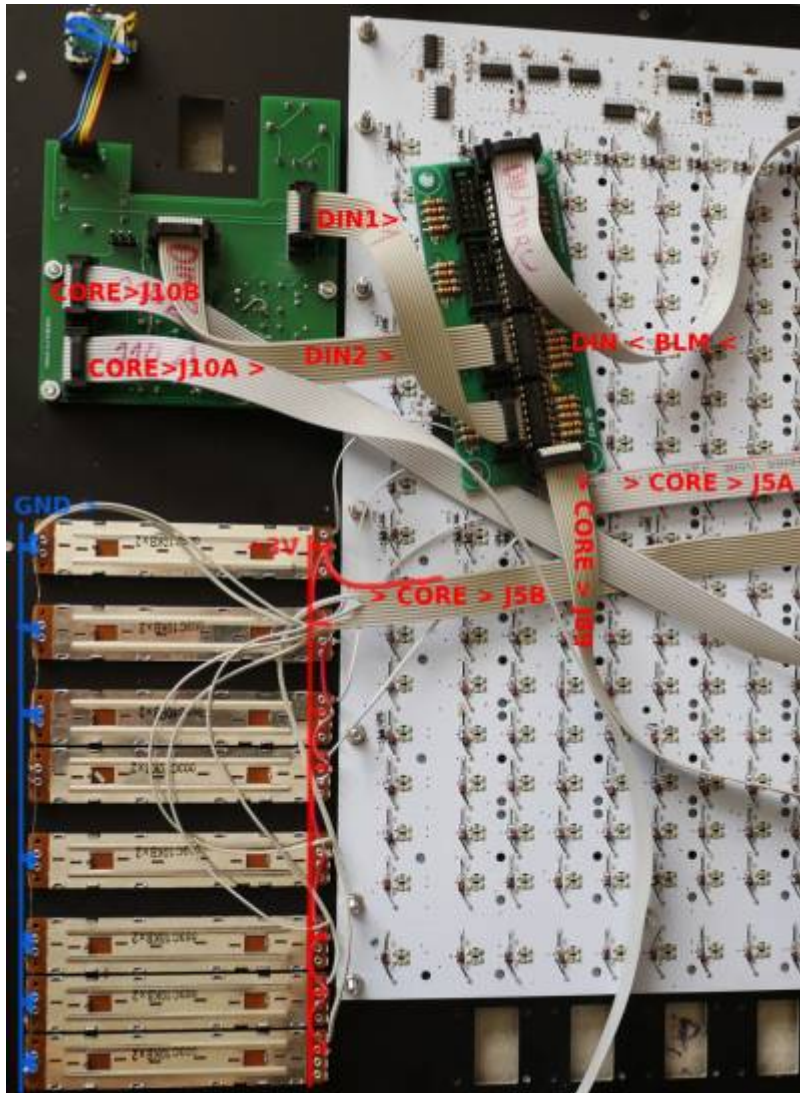
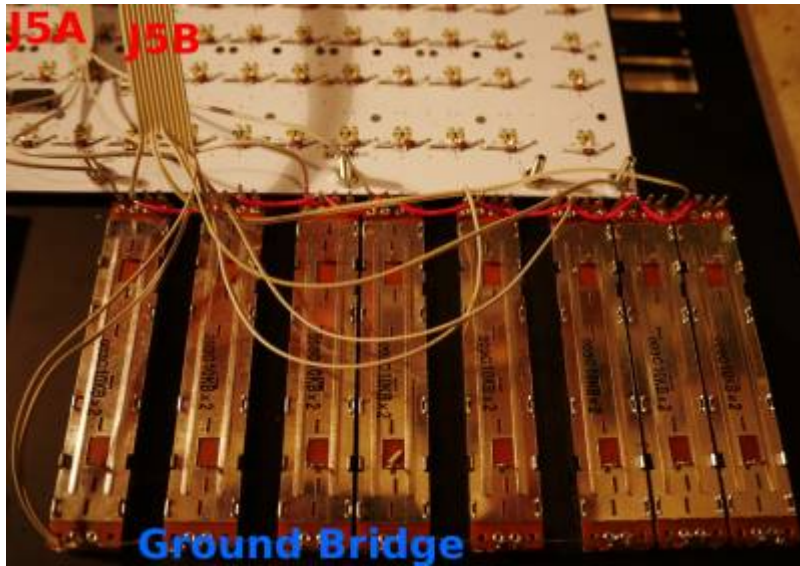




**Labels:**

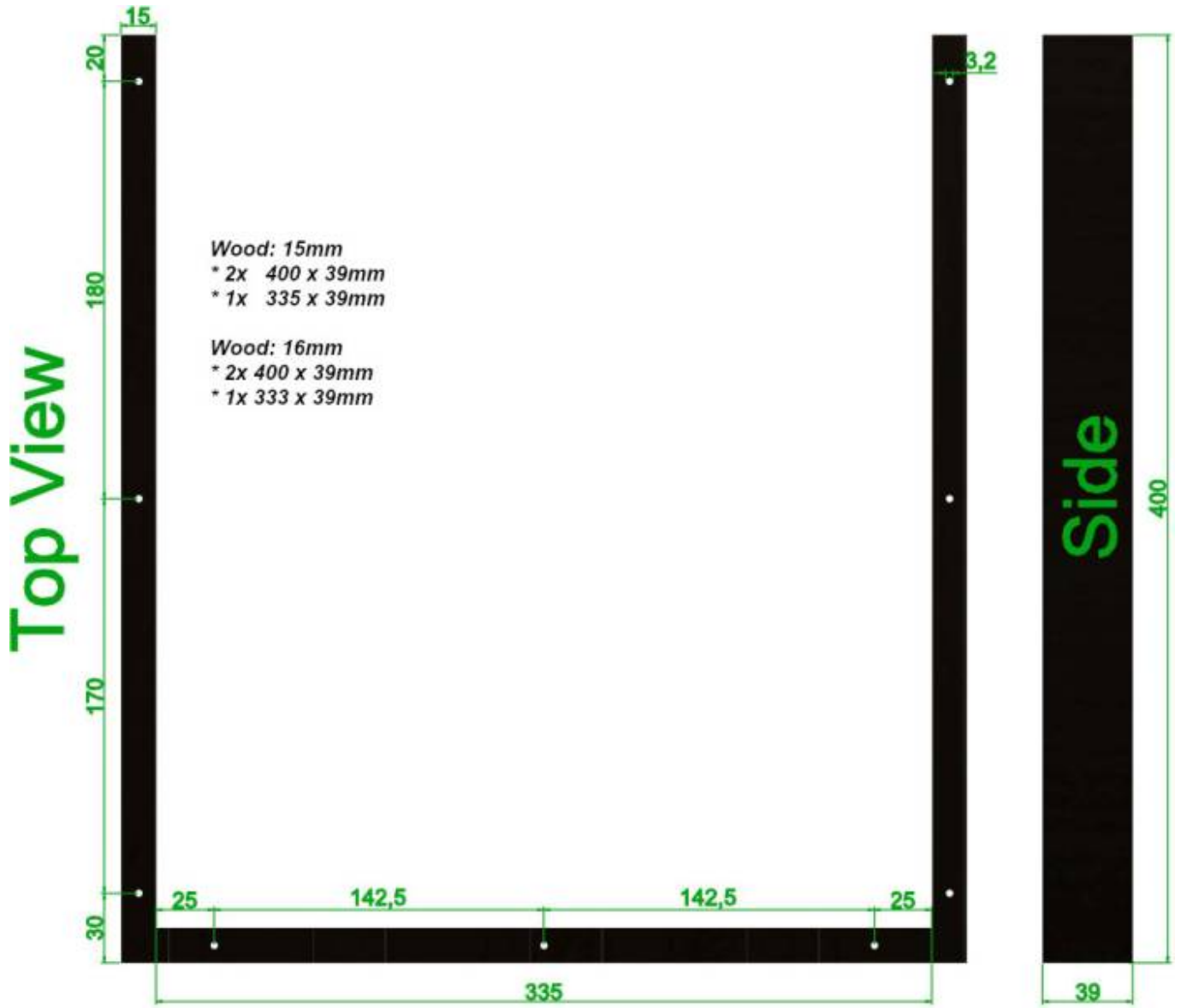






**Wood-Elements:**

15mm "hard-Wood", i use BEECH, let it cut by your local hardwarestore...







## Features

### Short spoken:

- 16xdrumtriggers > Trigger-Routing-Matrix > Drum-Syntesizers
- 5x Poly Melody-lines > Trigger-Routing-Matrix > Melody-Syntesizers (track 1-5)
- 7x Mono Melody-lines > Trigger-Routing-Matrix > Melody-Syntesizers/Pitachable Drums (track 6-12)

### Rules:

- Drum-Trigger are Velocity Master > we dont care about the velocity of the Melodys
- There are Songs (ProgramChange), each Song has 8 different Trigger-Routings Presets> these are the Song-Parts
- Each Song has 4 StepSequencer-Variants (Rythms)
- Each Song can Remote up to 6 Melody Scenes (LoopA-compatible!)
- 256 Songs saved on SD-Card, and Load-able while playing
- The Tempo has to be changed by Hand or Midi, it is not saved with the song
- System-Settings, like Ports or MidiChannels are Hardcodet, but there will be a sys-menue in near future
- Triggermatrix midi-outs are connected to all synths, so it manage the program-change also
- 16x Trigger-OUTs with fixed Notes, on one midichannel - to connect Drum-Synths, Drum-Samplers
- 5x Polyphonic Melody-Retrigger-OUTs on 5 MidiChannels - to connect MelodySynths to it
- 7x Monophonic Melody-Retrigger-OUTs on 7 MidiChannels - to connect Monophonic Synths like

pitchable Drums or Bass-Synths  **Fix Me!** - i think 1-5 is poly the rest is mono!

- All 16 Trigger & ReTrigger-OUTs share the same Routing and Channelstrip UI (Mute, Solo, Roll...)
- Trigger, Poly, Mono-OUTs can be controlled seperatly by > **Random-Kill** & **Velocity-OFFSet**
- 5x16 Melody-Input-Matrix - Route & Mix Melody Inputs to the 16 Melody-Retrigger-Outs (saved in Song)
- 16x Melody-Input-Matrix-Hold-Buttons - hold the last Note, save it in the Patch - usefull when pitch drums.

the Matrix has also a Trigger-Sequencer built in, the Melodys have to come from anywhere else, but @ the end, they have to be plugged into the matrix...

### Trigger-sequencer, a few facts:

- is a Drum-Step-Sequencer
- 256 Steps in total
- 32 th fixed rate
- 3,4,5,7,11,13/4 tact
- minimal LoopSection is 16steps = 1 Page, there are 16 pages to chain
- intro LoopSection, from step 0 until to the "minimal LoopSection"- is played once, then it loops the normal LoopSection
- The sequencer is made to give a static NoteStream, the Song-Structure is done LIVE by the TriggerMatrix-ROUTER
- Full Velocity control, visible with 3 different colours, Velocity Set via FADER
- Free programmable Swing to each Step, with 2 different swing Length-sets, which are controlled live with encoder
- copy, paste, erase of pages
- copy, paste, erase of rows\\E
- fixed forward play direction

## Community users working on it

- **Phatline** = Programming, Documentation, Hardware-Prototype, Testing, Jamin...
- Maxim Anokhin - as first User of TM4 - Serial Nr.1

## Getting Involved ?

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

From:

<https://www.midibox.org/dokuwiki/> - **MIDIbox**

Permanent link:

<https://www.midibox.org/dokuwiki/doku.php?id=triggermatrix4&rev=1627673348>

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