

# TriggerMatrix V0

yes there is a 8bit Prototype, built in a Techstar made it a TEKKSTAR, but also there it was soon replaced with a 32Bit Core,



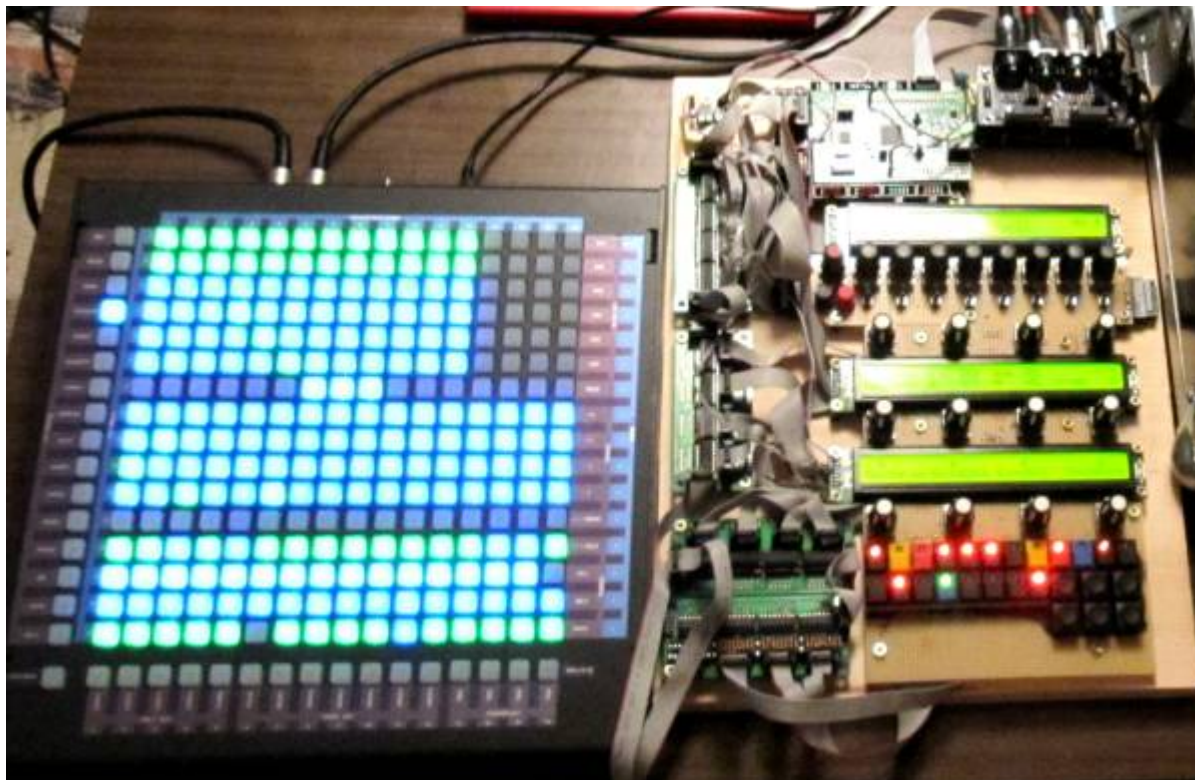
it was a 8x8 LED-Matrix, with 2x8 Buttons, on Breadboard



a other 32bit Variante built in on the other Upper-Manual in Crumar 198, UI-controlled via a BCR2000

# TriggerMatrix V1

32 Bit PROTOTYPE



# TriggerMatrix V2

not supported anymore, it has timing issues, use the way more lightweight V3 or V4!



# What is Triggermatrix ?

a quick but not full view into triggermatrix and sequencing (german-austrian)

[Triggermatrix Teaching](#)

[Triggermatrix-basics](#)

[Echtzeit Musik](#)

## Teaser

You have spend time to program a cool rythm, and you already know which chords/melodys you want to play, and now its time to programm the timing/steps/the rythm in the melody... after quite a while of trying and looking on your drumline you have a fitting melody line for your drums...

now you change the drums a bit... o no i also have to change the melody now... i make a break, a intro...oh no so much work and time...and all because, the melody is fixed in arrangement,

you want a melody line that goes with beat? you want to change the beat note stream also (noteprocessing)? > read more... i have a tool for you!!! it will change your way doing LIVE! get ready for JAM!

## Features

### Short spoken:

- 16xdrumtriggers > Trigger-Routing-Matrix > Drum-Syntesizers
- Melody-lines > Trigger-Routing-Matrix > Melody-Syntesizers

### Rules:

- Drum-Trigger are Velocity Master > we dont care about the velocity of the Melodys
- There are Songs (ProgramChange), each Song has 16 different Trigger-Routings Presets> these are the Song-Parts
- 512 Songs saved on SD-Card, and Load-able while playing
- 512 System-Settings(Setups) saved on SD-Card...i use only one of it
- 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
- 6x Polyphonic Melody-Retrigger-OUTs on 6 MidiChannels - to connect MelodySynths to it
- 12x Monophonic Melody-Retrigger-OUTs on 12 MidiChannels - to connect Monophonic Synths like pitchable Drums or Bass-Synths
- 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**
- 6x 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.

V1: 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
- 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 by the TriggerMatrix
- Full Velocity control, visible with 3 different colours, each colour-Vel is set with its own CC
- Free programmable Swing to each Step, with 2 different swing Length-sets, which are controlled live via CC
- copy, paste, erase of pages
- copy, paste, erase of rows
- forward, backward, fw><bw - play direction
- Not only 4/4 are possible, all other things like 5/4 are possible! +++

## **Generic Interface**

Generic in sense of: PCBs that already out there:

- [Wilba SEQ CS](#)
- [BLM16x16x](#)
- [LRE8x2CS\\_PCB](#)
- [CORE32 STM32F4](#)
- [2x 2x40Char Display](#)
- [2x Midi IO](#)
- SD-Card and some wires (which all are crimpable)

so when you have those things, upload [the Code](#) & watch the videos above

Serial Chain is: Wilba SEQ-CS and then LRE8x2

code is working, SEQUENCER timing is a mess, i was still a newbie in c > "learning by doing"

here is a ["FrontPanel+Pin-Out"](#) where the functions on the WILBA CS & LRE8x2 are explained

SWING	JAM	PIN	6	4	2	0	6	4	2	0	6	4	2	0	6	4	2	0															
63	55	ENC	16	JOG																													
58	49	SR	6																														
ROUTE	FullVel	SR	6																														
46	38	PIN	2																														
57	34																																
CC	SetVel	BLM+x																															
47	39	32	33	40	41	48	49	56	57	24	25	16	17	8	9	0	1																
56	33	39	38	37	36	47	46	45	44	55	54	53	52	63	62	61	60	31	30	29	28	23	22	21	20	15	14	13	12	7	6	5	4
Kill Hi		Set Hi		Intro		SolLine		OntRec		Swing		Copy		Paste		Clear		<Move		Move>		STORE		LOAD		Ont16		Ont32		Ont64			
14	30	35	42	43	50	51	58	59	26	27	18	19	10	11	2																		
10	26	PAGE																															
Kill Mid		Set Mid		SHIFT		Vel-Inv		LoopL		SyncTy		Copy		Paste		Clear		BEAT		STOP		PLAY		REC		<		>		<>			
15	31	37	44	45	52	53	60	61	1	28	29	18	19	11	3	4																	
9	25	FOCUS																															
Kill Lo		Set Lo		MB-LREbx2 CS 2.5 in serial to MB-SEQ CS Wlba																													
6	22	ENC	Kill M	Dcy_M	Vel_M	8	9	Delay	Swn16	Swn32	BTN																						
8	24	SR	7	7	8	8	9	10	10	10	LED																						
		ENC		Kill D		Dcy_D		Vel_D		Kill_T		FullVel		Vel_Lo		Vel_Mi		Vel_Hi															
		SR		7		7		8		8		9		10		10		10															
		PIN		2		6		6		2		6		2		6		6															
				18		20		22		24		26		28		30		32															
				1		3		5		7		9		11		13		15															



# TriggerMatrix V3



## Teaser

like V2, V3 is ready for JAM.  
 in V2 we had a lot of UI-Elements, Menues, and Settings.  
 V3 is stripped down and optimized: 8 Faders, 5 Tactial Buttons, 3 Switches, 1 Encoder, + BLM16+16X.  
 in a Way it is more like V0 Tekkstar, there we had only a matrix a view buttons and Pots... more a instrument  
 3/4 4/4 4/5 and other settings are Set on the 16x16 Matrix with "on matrix text".  
 The Timing now is rock-steady.  
 New is the Clip-Launcher, here we can Ableton-Style switch Clip-Variations and Songs  
 Now we have a Roll-Variation Fader!

## Features

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- 16xdrumtriggers > Trigger-Routing-Matrix > Drum-Syntesizers
- Melody-lines > Trigger-Routing-Matrix > Melody-Syntesizers

### 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
- 256 Songs saved on SD-Card, and Load-able while playing
- System-Settings, like Ports or MidiChannels are Hardcodet
- 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
- 11x Monophonic Melody-Retrigger-OUTs on 11 MidiChannels - to connect Monophonic Synths like pitchable Drums or Bass-Synths
- 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**
- 6x16 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 via CC EDIT no CC for that right now
- copy, paste, erase of pages
- copy, paste, erase of rows
- fixed forward play direction

## U Interface

PCBs that already out there:

- [BLM16x16x](#)
- [CORE32 STM32F4](#)
- [2x Midi IO](#)
- SD-Card and some wires (which all are crimpable)

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Extendet UI via GPIO via J10AB, J5AB:



## Community users working on it

- [Phatline](#) = Programming, Documentation, Hardware-Prototype, Testing, Jamin...

## Getting Involved ?

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



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