

# 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,



[Tekkstar in use](#)

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



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

[Video-Crumar-In-Use](#)

# TriggerMatrix V1

32 Bit PROTOTYPE



# TriggerMatrix V2

not supported any more, it has timing issues, use the way more lightweight V3!



# 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																																												
58	49	SR	6	JOG																																											
ROUTE	FullVel	SR	PIN	2																																											
46	38																																														
57	34																																														
CC	SetVel																																														
47	39																																														
56	33																																														
BLM+x																																															
32	33	40	41	48	49	56	57	24	25	16	17	8	9	0	1	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
Intro		SolLine		OntRec		Swing		Copy		Paste		Clear		<Move		Move>		STORE		LOAD		Ont16		Ont32		Ont64																					
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SHIFT		Vel-Inv		LoopL		SyncTy		Copy		Paste		Clear		BEAT		STOP		PLAY		REC		<		>		<>																					
37	44	45	52	53	60	61														28	29	20	21	12	13	4																					
07	41	40	48																1																												
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MB-LREbx2 CS 2.5 in seriell 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	2	6	2	6	2	6																																					
				18	20	22	24	26	28	30	32																																				
				1	3	5	7	9	11	13	15																																				



# TriggerMatrix V3



## Teaser

V2 was Song-Structured, **V3 is to JAM** in V2 where lot of UI-Elements, Menues, and Settings.  
**V3 is stripped down and optimized:** 8 Faders, 5 Tactial Buttons, 3 Switches, 1 Encoder, + BLM16+16X.  
 its more the original V0 Tekkstar, there we had only a matrix a view buttons and Pots 3/4 4/4 5/ 7/4... and others, is Set on the 16x16 Matrix with "on matrix text".  
 Timing now is rock-steady. And we are Sequencing on 32th  
 New is the **Clip-Launcher**, here we can Ableton-Style switch Clip-Variations and Songs  
 Now we have a **Roll-Variation Fader!**

## 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 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)

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

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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