Contents

0. About This Handbook

This manual is meant to show you, the RozzBox owner, the structure and functions of the RozzBox One V2. It is not meant to be an introduction to subtractive synthesis; we assume you to have basic knowledge of that. If you have, you will quickly get to know - and to love, I hope - the RozzBox and its peculiarities.

As an aid for finding your way through this manual I have systematically spread out some symbols which will notify you of specific items of interest.

(i) **Note**: This symbol marks useful additional remarks.

🖉 **Tip**: This symbol stands for tips or editing suggestions.

☞ **Reference**: A reference to further information placed elsewhere in this handbook

💥 **Attention**: A notification of possible source of error

The manufacturer "Kilian Leonhardt, Development and Distribution of Electronic Audio Equipment", in the following called L.L. Electronics, is not responsible for mistakes that might be included in this handbook, in spite of extreme care in writing and translating. The contents of this handbook may be altered at any time for improvement.

The „RozzBox® One V2" is a musical synthesizer. It is a product of this manufacturer and will be referred to in this handbook shortly as "RozzBox", "our synthesizer" or "damn great dirt-thrower". "RozzBox" is a registered trade mark.

This handbook may not be reprinted or multiplied in any way, even in parts. The only exception is the use for strictly private purposes.

1.   Preface

Dear customer,

Thank you very much for purchasing this RozzBox synthesizer and for the trust you have set in me and my little company.

You know all those lame phrases: You have made an excellent decision in choosing the RozzBox, because you selected a synthesizer with possibilities by far expanding all the classical designs. This includes some peculiarities not incorporated in any other synthesizer, supplying you with an especially "rozzy" sound (for non-German speakers: the term "rozz" is a pun on the German word for "snot": Rotz).
Even though the RozzBox specializes in rather unusual sounds, it is nevertheless capable of producing a lot of "clean" standard synthesizer sounds, too, therefore covering a wide spectrum of sounds, from digital fizz to analogue pads.

Enough with words - have fun with the RozzBox! For questions, problems, hints or generous flattery simply write an e-mail to support@rozzbox.de or visit our website www.rozzbox.de.

Yours,
Kilian Leonhardt

P.S.: Please be sure to read the safety instructions, for improper use of the RozzBox will void your warranty.

2.   Safety instructions

⚡ **Attention**: These safety instructions are to be followed nicely!

1. The RozzBox needs a certain working climate. Using it in the sauna or in direct sunlight might induce permanent damage for which L.L. Electronics is not to be held responsible. Keep sources of heat, such as ovens or valve computers, away from the RozzBox, and ensure air circulation all around the unit.
Never cover the venting slots of the base-plate (absent on some models)!

2. Keep moisture and dirt away from the RozzBox, and don't allow any objects to enter the inside of the unit. Don't operate the RozzBox in environments prone to this kind of danger.

3. Don't expose the RozzBox to any strong vibrations.

4. In case your RozzBox should cease to work (which will hopefully never happen!) you are not eligible to any compensation expanding those covered by law (e.g. if you should be forced to cancel a concert).

5. The RozzBox and the power supply supplied with it are not to be opened or modified by you, the customer. Doing so might expose you to hazardous voltages, which is nothing to be taken lightly!

6. The RozzBox is capable of producing frequencies below and beyond the human hearing range. There are no internal precautions against that. Please be careful with your volume in order to avoid damage to your sound system, your speakers or your ears.

7. Only operate your RozzBox from a wall plug matching the connected load of the power supply.

8. Only operate your RozzBox under supervision, and unplug all mains after use.

9. Only use the power supply supplied with your RozzBox. In case of loss or damage please ask L.L. Electronics for replacement.

10. If your RozzBox should get dirty from the outside in spite of all loving care, please clean it with a slightly moist, soft cloth. Never use any strong detergents!

11. Treat your RozzBox carefully and it will last for a long time.

3.   Connections, Setting Up

On the back of your RozzBox you will find the following connections and operating elements:
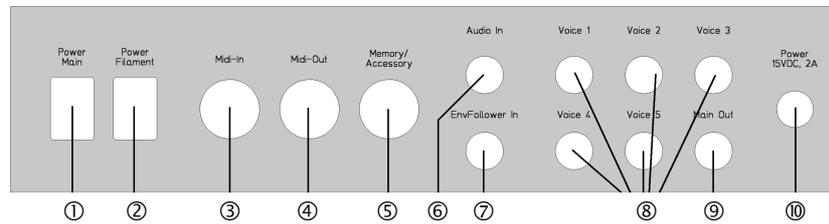
①   **Power Main**: This is the main power switch to power the RozzBox on and off.

In case you own a RozzBox with built-in ventilation, don't be alarmed if the ventilators don't stop immediately after powering down. The ventilators are switched off automatically after some minutes.

②   **Power Filament**: This is a separate switch for the valve heating, in case your RozzBox is fitted with a valve filter. When the valve filter is not used it can be deactivated in order to increase valve life span. This switch is coupled with the main power switch. The valve heating is switched off automatically when "Power Main" is switched off.

③   **MIDI In**: Connect a MIDI source to this socket to control your RozzBox. Suitable sources might be a master keyboard, MIDI trigger pads or a computer interface.

④   **MIDI Out**: Connect a MIDI unit to this socket in order to receive controller data from the pots (e.g. a computer) or to receive data via MIDI Thru.

☞ **Reference:** Refer to chapter 7.6 "MIDI Out Configuration" for proper MIDI Out configuration.

⑤   **Memory/Accessory**: Use this socket to connect external patch memory or additional units supplied by L.L.Electronics to your RozzBox.

⑥   **Audio In**: Connect any line level audio sources to this socket in order to process them digitally or analogically within the RozzBox.

☞ **Reference:** Refer to chapters 5.3.3 "The External Input" and 5.5.2 "Options within the Analog Signal Path" for possible options in doing so.

⑦   **Envelope Follower In**: Your RozzBox analyzes the loudness of any line level audio sources connected to this socket. These data can be used for modulation purposes and can be assigned via the modulation matrix. When this socket is not used, the audio input is used for analysis.

⑧   **Voice Separate Outs:** These sockets carry the audio signals from the single voices of the RozzBox. Please connect these sockets to the line inputs of your mixer.

⑨   **Main Out**: This socket carries the mixed signal of all voices. Please connect this socket to the line input of your mixer. Voices which are already tapped via the separate output sockets are automatically removed from the Main Out.

⑩   **Power In**: This is the connection for the power supply. Please use only the power supply supplied with your RozzBox.

⚡   **Achtung**: Always take care that all units (RozzBox, mixer, amplifier etc.) are either powered down while connecting anything, or turn down their volume to 0 (don't start searching for the volume knob on the RozzBox - it doesn't have one!).

Setting Up

Before setting up please ensure a secure position for the RozzBox and connect all necessary cables between your equipment and your RozzBox.
Afterwards connect the power supply supplied with your RozzBox and plug it in.
Before powering up the RozzBox turn all volume pots of your mixer and amps to 0, and then press "Power Main".

You should now be able to read "Patch No." and "00" on the RozzBox display. Your RozzBox is now ready for use. Patch "00" is automatically loaded while powering up.

☞ **Reference:** If you simply can't wait and you want to play around with the preset sounds, please refer to chapter 4.3.3 "Saving and Loading of Patches"!

4.   Editing of Parameters
4.1   Selecting and Using of "Pages"

The RozzBox One V2 has got a lot of parameters which are impossible to be made accessible on a user interface. So the RozzBox is equipped with alternative functions for some knobs. These are labelled by different colours.

The accessible pages are:

Page A	standard page, active by default	labelled in white
Page B	alternative page	orange Beschriftung
Page S1	settings for sequencer 1	labelled in red
Page S2	settings for sequencer 2	labelled in red
Page S3	settings for sequencer 3	labelled in red
Page S4	settings for sequencer 4	labelled in red
„Filterbank"	user-defined edit page	refer to chapter 7.5

Example: Turn the knob labelled "ENV1 Attack" in white and you will change exactly that parameter.
When your RozzBox is in "Page B" mode ("on Page B") and you turn the same knob, you change the alternative parameter "ENV1 Velocity Response", labelled in orange, instead.
When your RozzBox is in "Page S1" mode and you turn this knob, you change step 9 in sequencer 1 - the 9 is labelled in red on the front plate.

The shifting of pages is generally done via the menu, whose structure and use is described in chapter 4.3. But there is a short cut:

When you press Exit and Enter simultaneously, you immediately enter "Page B" mode; the display will show "Page B". You can gain access to the other pages via the "+" and "-" keys.
You return to Patch Select mode by pressing both "+" and "-" keys simultaneously.

4.2   Fade-In Parameters

Your RozzBox provides you with additional tools for some of the parameters on the front via the so-called Fade-In Parameters.

E.g., when you turn the Tune pot of OSC1, the display will show "Finetune OSC1" together with a number between 0 and 7. Approximately two seconds later this fade-in will disappear again.
In this example the fade-in displays the [Finetune] parameter of the selected oscillator. To change this parameter by pressing the "+" and "-" keys or via the data dial during the time of fade-in.

The following parameters are accessible via fade-in:

Parameter on Front Plate	Fade-In and Range	Description of Fade-In Parameter
[OSC Tune]	Finetune OSC [0...7]	fine-tuning of selected oscillator
[Filter Cutoff]	Finetune FIL [0...7]	Fine-tuning of filter cutoff
[Mod Amount]	Coarse MOD [0...3]	Range of Amount pot: 0: normal range 1: double range 2: triple range 3: quadruple range
[Mod Source]	Source MOD [0...F]	Selection of additional sources**
[Mod Destination]	Destination MOD [0...F]	Selection of additional destinations **

** The selection of additional sources and destinations allows you to select all modulation sources and modulation destinations available in the RozzBox. These are:

Modulation Source	Modulation Destination
ENV 1	Pitch OSC 1
ENV 2	Pitch OSC 2
LFO 1	Pitch OSC 3
LFO 2	Pitch OSC 4
VELO	Pitch (gesamt)
ModWeel	PW OSC 1
ModWeel * LFO 1	PW OSC 2
OSC 1	CUT Filter 1
OSC 2	CUT Filter 2
OSC Mix	CUT Filter (gesamt)
MIDI Pitch	RESO Filter 1
Envelope Follower	RESO Filter 2
SEQ 1	LFO 1 Speed
SEQ 2	LFO 2 Speed
SEQ 3	MOD1 Amount
SEQ 4	VCA

4.3   The Menu System
4.3.1   Navigation within the Menu

You enter the menu of the RozzBox by pressing "Enter/Menu" and the "-" key.
You exit it by simultaneously pressing "+" and "-" or pressing "Exit/Recall" a few times, depending on where ("how deep") you are in the menu.

The RozzBox menu is structured hierarchically. In other words: There are menu points and sub-points, and even sub-sub points. In order to reach the next deeper hierarchy level (if there is one from where you are) you press "Enter". Eventually you can also trigger special functions (e.g. a MIDI reset). For the next higher hierarchy level you press "Exit".

When you are on a specific menu point you can move within this level via the data dial and the "+" and "-" keys.
When you are on a parameter you can use the data dial and the "+" and "-" keys for changing that parameter.

4.3.2   Menu Structure

Hauptmenüpunkt	Untermenü 1	Untermenü 2	Beschreibung & Werte	Menüpunkt Nr.
Edit Page ➔	Page A		Befindet sich die RozzBox auf diesem Menüpunkt, so editieren die Bedienelemente Page A (weiße Beschriftung).	#02
	Page B		Befindet sich die RozzBox auf diesem Menüpunkt, so editieren die Bedienelemente Page B (gelbe Beschriftung).	#03
	Page S1		Befindet sich die RozzBox auf diesem Menüpunkt, so editieren die Bedienelemente Page SEQ1 (rote Beschriftung).	#04
	Page S2		Befindet sich die RozzBox auf diesem Menüpunkt, so editieren die Bedienelemente Page SEQ2 (rote Beschriftung).	#05
	Page S3		Befindet sich die RozzBox auf diesem Menüpunkt, so editieren die Bedienelemente Page SEQ3 (rote Beschriftung).	#06
	Page S4		Befindet sich die RozzBox auf diesem Menüpunkt, so editieren die Bedienelemente Page SEQ4 (rote Beschriftung).	#07
Distortion Type			[Distortion Type] Parameter. Siehe Kapitel 5.4.2 {0; 1; 2; 3}	#08
Frequency Modulation➔	FM Mode		[FM Mode] Parameter. Siehe Kapitel 5.2 {0; 1; 2; 3; 4; 5; 6; 7}	#09
	OSC1 Mod Amount		[OSC1 Mod Amount] Parameter. {0-99}	#10
	OSC1 Mod Source		[OSC1 Mod Source] Parameter. {ENV1; ENV2; LFO1; LFO2; VELO}	#11
	OSC2 Mod Amount		[OSC2 Mod Amount] Parameter. {0-99}	#12
	OSC2 Mod Source		[OSC2 Mod Source] Parameter. {ENV1; ENV2; LFO1; LFO2; VELO}	#13
	OSC3 Mod Amount		[OSC3 Mod Amount] Parameter. {0-99}	#14
	OSC3 Mod Source		[OSC2 Mod Source] Parameter. {ENV1; ENV2; LFO1; LFO2; VELO}	#15
Signal Routing ➔	Filter Mode		[Filter Mode] Parameter. Siehe Kapitel 5.5.1 {0; 1; 2; 3}	#16
	Analog Insert		[Analog Insert] Parameter. Siehe Kapitel 5.5.2 {Off; On}	#17
	Tube Switch		[Tube Switch] Parameter. Siehe Kapitel 5.5.2 {local, global}	#18
LFO Settings ➔	LFO1 MIDI Sync		[LFO 1 MIDI Sync] Parameter. Siehe Kapitel 5.7.3 {Off; On}	#19
	LFO2 MIDI Sync		[LFO 2 MIDI Sync] Parameter. Siehe Kapitel 5.7.3 {Off; On}	#20
	Sync Clock Divider		[MIDI Sync Clock Divider] Parameter. Siehe Kapitel 5.7.3 {8 per Cycle - 1/16 per Cycle}	#21
	Sync Clock Offset		[MIDI Sync Clock Offset] Parameter. Siehe Kapitel 5.7.3 {0-99}	#22
Sequencers ➔	SEQ1 ➔	SEQ Running Mode	[SEQ 1 Running Mode] Parameter. Siehe Kapitel 5.8.3 {0; 1; 2; 3; 4; 5; 6; 7; 8}	#23
		SEQ Quantize	[SEQ 1 Quantize] Parameter. Siehe Kapitel 5.8.3 {Off; On}	#24
		Page S1	Befindet sich die RozzBox auf diesem Menüpunkt, so editieren die Bedienelemente Page SEQ1 (rote Beschriftung).	#25

Hauptmenüpunkt	Untermenü 1	Untermenü 2	Beschreibung & Werte		Menüpunkt Nr.
	SEQ2 ➜	SEQ Running Mode	[SEQ 2 Running Mode] Parameter. Siehe Kapitel 5.8.3 {0; 1; 2; 3; 4; 5; 6; 7; 8}		#26
		SEQ Quantize	[SEQ 2 Quantize] Parameter. Siehe Kapitel 5.8.3 {Off; On}		#27
		Page S2	Befindet sich die RozzBox auf diesem Menüpunkt, so editieren die Bedienelemente Page SEQ2 (rote Beschriftung).		#28
	SEQ3 ➜	SEQ Running Mode	[SEQ 3 Running Mode] Parameter. Siehe Kapitel 5.8.3 {0; 1; 2; 3; 4; 5; 6; 7; 8}		#29
		Page S3	Befindet sich die RozzBox auf diesem Menüpunkt, so editieren die Bedienelemente Page SEQ3 (rote Beschriftung).		#30
		SEQ Running Mode	[SEQ 4 Running Mode] Parameter. Siehe Kapitel 5.8.3 {0; 1; 2; 3; 4; 5; 6; 7; 8}		#31
		Page S4	Befindet sich die RozzBox auf diesem Menüpunkt, so editieren die Bedienelemente Page SEQ4 (rote Beschriftung).		#32
	Page Switcher ➜	Activate Switcher	[Page Switcher Running Mode] Parameter. Siehe Kapitel 5.11 {Off; On}		#33
		Edit Switcher Page	[Switcher Page Edit] Parameter. Siehe Kapitel 5.11 {Off; On}		#34
Trigger Matrix ➜	Connect		[Triggermatrix connect] Funktion. Siehe Kapitel 5.10.2 Bedienung: Quellennummer einstellen, Enter, Zielnummer einstellen, Enter.		#35
	Disconnect		[Triggermatrix disconnect] Funktion. Siehe Kapitel 5.10.2 Bedienung: Quellennummer einstellen, Enter, Zielnummer einstellen, Enter.		#36
	Reset		[Triggermatrix reset] Funktion. Siehe Kapitel 5.10.3 Bedienung: Enter drücken. Löscht alle Verbindungen der Triggermatrix.		#37
	Default		[Triggermatrix default] Funktion. Siehe Kapitel 5.10.3 Bedienung: Enter drücken. Setzt die Triggermatrix auf die Defaulteinstellung.		#38
	Preset		[Triggermatrix preset] Funktion. Siehe Kapitel 5.10.3 Bedienung: Preset wählen, Enter drücken.		#39
Multimode ➜	Global Mode		[Global Mode] Parameter. Siehe Kapitel 6.2 {Poly, 5 Voice - Multimode 1-1-1-1}		#40
	Edit Part		Selektiert gerade editierten Part. Siehe Kapitel 6.3 {0; 1; 2; 3; 4}		#41
	Settings ➜	Part 1 ➜	MIDI Channel	[Midi-Channel] Parameter. Siehe Kapitel 6.4	#42
			Patch No	[Patch] Parameter. Siehe Kapitel 6.4	#43
			Detune	[Detune] Parameter. Siehe Kapitel 6.4	#44
			Note Offset	[Note Offset] Parameter. Siehe Kapitel 6.4	#45
			Range from	[Range from] Parameter. Siehe Kapitel 6.4	#46
			Range to	[Range to] Parameter. Siehe Kapitel 6.4	#47
		Part 2 ➜	Dieses Menü beinhaltet die gleichen Unterpunkte wie „Part 1".		#48-
		Part 3 ➜	Dieses Menü beinhaltet die gleichen Unterpunkte wie „Part 1".		#54-
		Part 4 ➜	Dieses Menü beinhaltet die gleichen Unterpunkte wie „Part 1".		#60-
		Part 5 ➜	Dieses Menü beinhaltet die gleichen Unterpunkte wie „Part 1".		#66-
	Save Multi		[Save Multi] Funktion. Siehe Kapitel 6.5 Bedienung: Multi-Speicherplatz wählen, Enter.		#72
	Load Multi		[Load Multi] Funktion. Siehe Kapitel 6.5 Bedienung: Multi-Speicherplatz wählen, Enter.		#73
Misc ➜	Detach OSC1		[Detach OSC1] Parameter. Siehe Kapitel 5.1.2 {Off; On}		#74
	Interpolate Wave 1		[Interpolate Wave 1] Funktion. Siehe Kapitel 5.8.4 Bedienung: SEQ4 nach Wunsch einstellen, Enter.		#75
	Interpolate Wave 2		[Interpolate Wave 2] Funktion. Siehe Kapitel 5.8.4 Bedienung: SEQ4 nach Wunsch einstellen, Enter.		#76
	Import Wave 1		[Import Wave 1] Funktion. Siehe Kapitel 7.1 Bedienung: Quell-Patchnummer wählen, Enter.		#77
	Import Wave 2		[Import Wave 2] Funktion. Siehe Kapitel 7.1 Bedienung: Quell-Patchnummer wählen, Enter.		#78
	Import Sequencer		[Import Sequencer] Funktion. Siehe Kapitel 7.1 Bedienung: Quell-Patchnummer wählen, Enter.		#79
	MultiControl		Befindet sich die RozzBox auf diesem Menüpunkt, so editieren die Bedienelemente Part-übergreifend drei wählbare Parameter. Siehe Kapitel 7.5		#80
	Multi Control Assign ➜	Row 1	[Row 1] Globalparamter. Siehe Kapitel 7.5		#81
		Row 2	[Row 1] Globalparamter. Siehe Kapitel 7.5		#82
		Row 3	[Row 1] Globalparamter. Siehe Kapitel 7.5		#83

				#84
	Filter Swap		[Filter Swap] Globalparamter. Siehe Kapitel 7.4 {Off; On} Auf Page A wird bei „On" Filter 2 statt Filter 1 editiert.	#84
MIDI ➜	MIDI Reset		[MIDI Reset] Funktion. Siehe Kapitel 7.2 Bedienung: Enter. Beseitigt Notenhänger.	#85
				#86
	MIDI Filters ➜	Controller	[MIDI Filter Controllers] Globalparamter. Siehe Kapitel 7.3 {Off; On} Bei „On" werden eintreffende MIDI-Controller ignoriert.	#87
		NRPNs	[MIDI Filter NRPN] Globalparamter. Siehe Kapitel 7.3 {Off; On} Bei „On" werden eintreffende NRPNs ignoriert.	#88
		Program Changes	[MIDI Filter Patch Change] Globalparamter. Siehe Kapitel 7.3 {Off; On} Bei „On" werden eintreffende Patch Changes ignoriert.	#89
	MIDI Out Configure		[MIDI Out] Globalparamter. Siehe Kapitel 7.6 {Out; Thru} Definiert den MIDI-Ausgang als Out bzw. Thru.	#90
	MIDI Channel		[MIDI Channel] Globalparameter. {1 - 16} Definiert den MIDI-Kanal, auf dem die Rozzbox Daten empfängt.	#91

4.3.3   Saving and Loading of Patches

You can store edited patches in 100 programs of the internal, non-volatile memory.
If you have the optional memory stick, you can connect it to the memory/accessory jack and have access to 60 more programs. This memory stick enables you to archive sounds easily and share them with other RozzBox users.

Attention: RozzBox One V2 memory sticks are not compatible to RozzBox One V1 memory sticks!

The procedures of saving and loading are identical for the internal and external memory. Just select the desired memory with the MEM switch. If the external memory is selected and addressed correctly, the display shows a little white square at the side.

After powering on the RozzBox is always on Page A by default, the display shows "Patch No.". In this mode the patch number desired for saving or loading can be selected. If you are "deeper" within the menu structure, you can return to this point by simultaneously pressing "+" and "-".

Select a patch number via the data dial or the "+" and "-" keys.

Loading

The selected patch is loaded by pressing "Recall" twice. After pressing this key once the display shows "Recall?". If you choose not to load the patch, simply press the key below the word "Abort?" in the display.

Saving

The currently edited patch is saved by pressing the "Save" key twice. After pressing this key once the display shows "Save?". If you choose not to save the patch, simply press the key below the word "Abort?" in the display.

5.   Structure of RozzBox Sound Engine
5.1   The Oscillators
5.1.1   Function and Waveforms

At the first stage within the RozzBox signal chain there are four independent oscillators with identical functions. Their parameters are:

[Octave]
This parameter is used for selecting the octave range of the oscillator. You can choose from 32', 16', 8' and 4'.

[Shape]
This parameter is used for selecting the waveform of the oscillator. The selections are:

Triangle	Standard synthesizer waveform.
Sawtooth	Standard synthesizer waveform. When this waveform is selected, you can hard-sync that oscillator to OSC1 via the [PW/Wave] parameter (left half: deactivated; right half: activated).
Square (PWM)	Standard synthesizer waveform. The pulse width of this waveform can be edited for each oscillator via the [PW/Wave] parameter (left half: edit fixed pulse width; right half: edit automatic pulse width modulation by LFO1).
Wave	In this mode you can select 16 additional waveforms via the [PW/Wave] parameter. Turned left you hear waveform 1. Waveforms 1-14 are permanently installed; waveforms 15 and 16 are user waves. These can be created by the user (refer to chapter 5.8.4 "Interpolation of User Waves").

[Tune]
With this dial you can alter the tuning of the oscillator within a range of twelve semitones.

ⓘ **Note**: When turning the "tune" dial you see a fade-in "Finetune OSC" with a number between 0 and 7 in the display for approximately two seconds. This is the fine-tuning of the [Tune] parameter, which you can edit via the "+" and "-" keys during the fade-in.
If you don't edit the parameter, the fade-in just fades out (please refer to chapter 4.2 "Fade-In Parameters").

☞

5.1.2   OSC 1 Special Mode

OSC 1 Special Mode

OSC 1 can be detached from MIDI pitch control via [OSC Detach]. Now Oscillator 1 sounds with a fixed pitch independent of the note played. This can be useful for special effects or for modulations via OSC 1.
You access this parameter via menu point #74.

With [OSC1 Detach] activated not only MIDI pitch control is detached, but simultaneously the [Octave] and [Tune] ranges are extended (Tune: three octaves instead of one).

5.1.3   Pre-patching of Oscillators

The RozzBox contains a few pre-patched connections concerning the oscillators.

Ring Modulator: The ring modulator is pre-patched to OSC 1 and OSC 2.
„Hacker":   The "hacker" (refer to chapter 5.12.6) is controlled by OSC 1 and/or OSC 2.

5.2   Frequency Modulation (FM)
5.2.1   Function

The principle of FM is that oscillators linearly modulate the frequency of other oscillators.
The so-called "FM algorithm" determines which oscillator modulates which other oscillator.

Oscillators modulating other oscillators are called "modulators".
Oscillators which are modulated by other oscillators are called "carriers".

The audio signal from a modulator is not fed into the mixer, but is directly forwarded to the selected carrier-oscillator. Modulation depth is controlled via the [Level] parameter of the modulator (which normally controls the volume of the oscillator).

The audio signal of a carrier-oscillator is audible in the mixer. The maximum volume of the carrier-oscillator can vary depending on the algorithm, because a variable number of carrier-oscillators can be fed into the mixer. The RozzBox automatically compensates for this.

5.2.2   The seven FM algorithms of the RozzBox

The desired FM algorithm can be selected via the [FM Mode] parameter in the menu (menu point #09). It is located in sub-group "Frequency Modulation". In the following you can see an overview showing you the eight modes - Mode 1 is the default mode without any frequency modulation. You can see the modulation paths in the diagrams, and which oscillators work as modulators or carriers.

The seven FM algorithms of the RozzBox

Algorithmus 0

Algorithmus 1

Algorithmus 2

Algorithmus 3

Algorithmus 4

Algorithmus 5

Algorithmus 6

Algorithmus 7
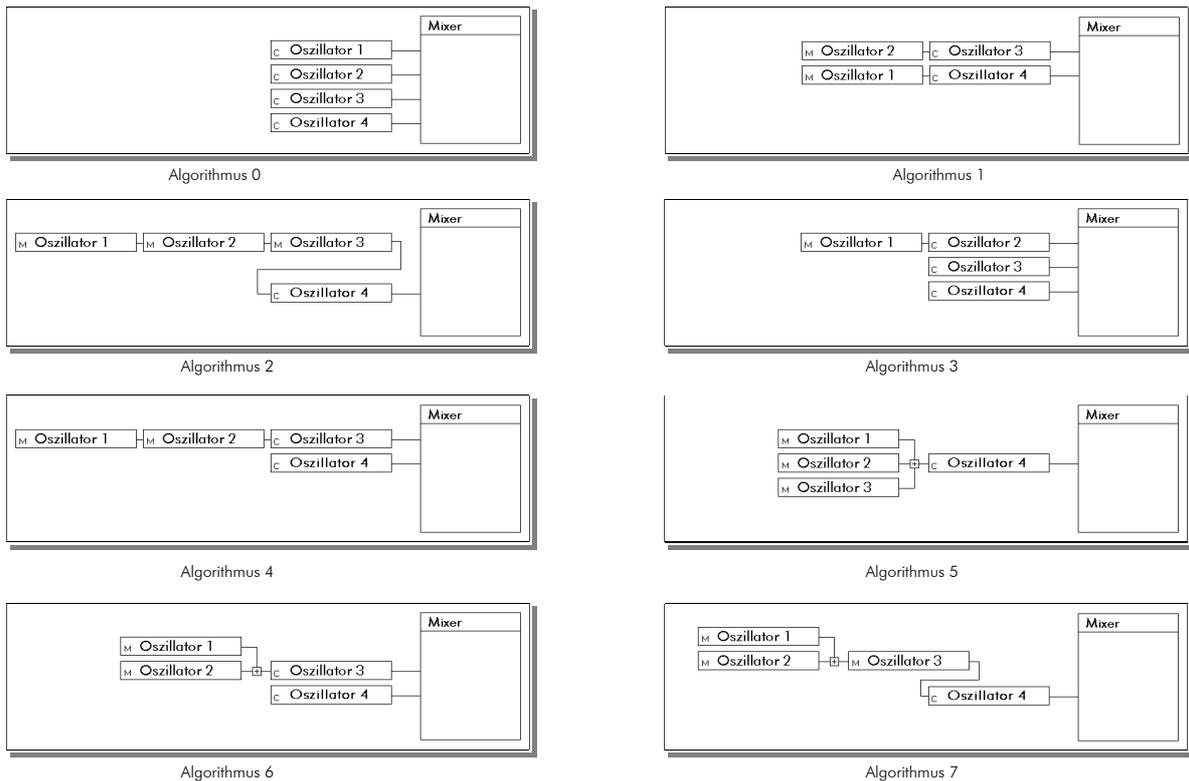
5.2.3   Modulation of FM Amount

The FM Amount (the modulation depth of a modulator on a carrier) is controlled by the [Level] parameter of the modulator.
This parameter can be modulated itself. You can use both envelopes, both LFOs and MIDI velocity as modulation sources.
For OSC 1, OSC 2 and OSC 3 you can select the modulation source via the [OSCx Mod Source], with "x" standing for the number of the modulator. You can find these parameters in the menu under "Freqmod", points #11, #13 and #15.
The modulation amount of the selected modulation source on the [Level] parameter can be controlled via the [OSCx Mod Amount] parameter. You can find this one in the menu under "Freqmod", too, points #10, #12 and #14.

✏ **Tip**:   The modulation of "FM Amount" even works in FM Mode 1, without any FM happening! In this case OSC volume is modulated. This function can be very useful for percussive sounds. OSC volumes can be modulated for each oscillator separately, without even touching the modulation matrix.

5.3   Additonal Sound Sources

5.3.1   The Ring Modulator

The ring modulator is a versatile tool for gaining additional frequency spectrums from stock waveforms. This is done by multiplying two sound sources, in this case OSC 1 and OSC 2.
The ring modulator works independently of the [Level] parameters of the two oscillators; its volume can be edited via "Page B" (refer to chapter 4.1 "Selecting and Using of Pages").

Attention: The ring modulator only works in FM algorithm 0!

5.3.2   The Noise Generator

The noise generator of the RozzBox generates white noise. In theory all frequencies are included in this waveform (I haven't counted!). The volume of this module, too, can be edited via "Page B" (refer to chapter 4.1 "Selecting and Using of "Pages").

5.3.3   The external Input

Signals connected to the External Input jack can be fed into the mixer. There is a parameter for editing the level of the external signal, again accessible via "Page B".

Notiz: The external input is not exactly low noise. It sounds like a waterfall, frequencies are bent out of shape and there is a lot of digital fizzing and buzzing going on. This is normal and not an indication of a defective unit.

There are other ways of using the external input. The incoming signal can be routed directly into the analogue filter. Please refer to chapter 5.5.2 "Options within the internal Signal Path".

5.4   The Mixer
5.4.1   Function

Here the outputs of the different signal sources are mixed. You can edit the input levels via the seven [Level] parameters.
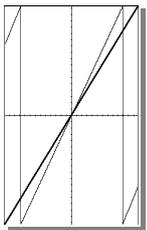
5.4.2   The Distortion Modes

The mixer can be used in different distortion modes controlling how the mixer reacts to being overdriven. The parameter [Clip Amount] varies the overdrive intensity by amplifying the mixer signal. The distortion modes can be selected via the menu (point #08), and two of the four modes can be selected via "Page B". The [Clip Amount] parameter can be edited via "Page B" ("Bit Res").
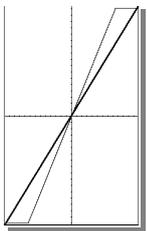
Distortion Mode 0: Brick Wall
Here we have a quite clean-sounding distortion mode, hardly noticeable when overdriven lightly, but producing reasonable wave-shaping effects when driven hard.
When the sum of the signals exceeds the bandwidth of the RozzBox, this mode limits hard up to the available bandwidth.

Distortion Mode 1: Digital Clip
This distortion mode creates very biting effects even when overdriven lightly.
When the sum of the signals exceeds the bandwidth of the RozzBox, a digital overflow is generated which is responsible for additional edges in the signal.
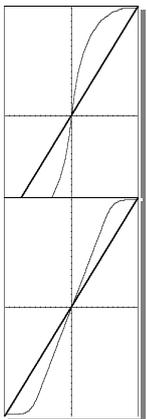
Distortion Mode 2: Overdrive 1
This distortion mode is similar to an analog overdrive effect. The effect sounds very warm and smooth and is therefore especially usable for creating analog-sounding basses. Even a basic sawtooth wave will gain warmth and depth with Analog Overdrive. Driven harder with via the [Clipping Amp] parameter this mode is suitable for deep-frying several oscillators at once.

Distortion Mode 3: Overdrive 2
This distortion mode doesn't have all the warmth of Analogue Overdrive 1 and should be used for a less obvious overdrive effect.

Note: I strongly suggest experimenting with the "Digital Clip" function. You will be able to gain many new sounds from it. Even with the basic waveforms of the oscillators lots of new waveforms are possible. The results can sound hard, edgy and digital depending on oscillator settings (especially the frequency ratio of several oscillators), or the sound is moved completely into FX territory. It is exciting to edit the "Level" dials while playing a sequence and therefore varying the intensity of the effect.

Attention: Distortion within the mixer section heavily influences the efficiency of the anti-aliasing filter. For optimal anti-aliasing results the distortion should be de-activated, no matter which mode. This can be achieved by using low oscillator levels or by decreasing the [Clipping Amp] parameter.
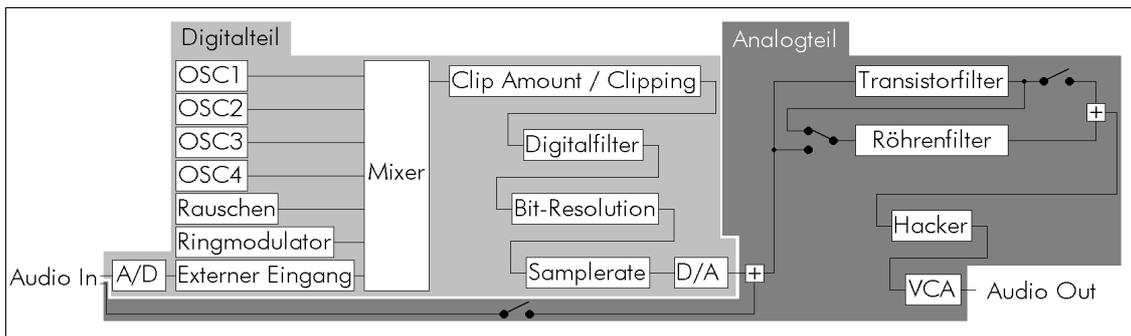
5.5   The Filters
5.5.1   Organization, Patching and Filter Modes

There are always two filters active in one RozzBox voice, which can be used simultaneously.
Both filters have the same four parameters available: [Cutoff], [Reso], [ENV 1] and [KBD Track]. All these parameters are edited via Pages A and B.

In addition to the two parameters directly controlling the filter parameters, [Cutoff] and [Reso], the filter section offers two pre-patched connections for modulations. You can control the amount of envelope 1 on filter frequency via "ENV 1", and with "KBD Track" you can control the amount of the filter frequency following the pitch (i.e. the frequency) of the played note. Turned to the far left the tracking is nearly 1:1, turned to the far right tracking is de-activated.
The sensitivity to the [KBD Track] parameter is higher with the analog transistor filter than with the digital filter. However, with clever editing a fairly exact 1:1 tracking is also possible.

The following sketch is a schematic outlay of the RozzBox signal path. This is helpful in understanding the interaction between the filters and the rozzy functions.

There are three filters available in a fully equipped RozzBox, but only two of them can be used simultaneously. You can select different filter combinations via the [Filter Mode] parameter (menu point #16). When selected, the modes are displayed with a little schematic on the display.

[Filter Mode]	Filter 1	Filter 2	Connection
0	Digital Filter	Transistor Filter	serial
1	Digital Filter	Valve Filter	serial
2	Transistor Filter	Valve Filter	serial
3	Transistor Filter	Valve Filter	parallel

5.5.2   Options Within the Analog Signal Path

You can select via the [Analog Insert] parameter (menu point #17) whether or not the signal connected to the "Audio In" jack is fed into the filters analog-style. You can see in the schematic above where exactly the signal is fed into the signal path.

If your RozzBox is polyphonic and equipped with a valve filter, you can select the valve filter to be used locally (voice 1) or globally (mix of all voices) via the [Tube Switch] parameter (menu point #18).

5.6   The Envelopes

The RozzBox is equipped with two independent ADSR envelopes with identical functions.
Envelope 1 is permanently connected to control the volume, but it can be assigned to additional destinations via the modulation matrix. Envelope triggering is determined by the trigger matrix - usually both envelopes are triggered by a gate signal gained from the MIDI input.

There are two envelope trigger modes, which are selectable via the "Single/Multi" switch. In "Single" Mode the envelopes are only triggered when no key was previously pressed (e.g. when playing staccato). In "Multi" Mode the envelopes are triggered whenever a key is pressed.

✎   **Tip:** "Multi" Mode is especially useful for sounds with the envelopes shutting off (nearly) everything after a while, e.g. with [Sustain] on 0.

On "Page B" you can select between a linear or exponential characteristics of the envelopes.

5.7   The Low Frequency Oscillators (LFOs)
5.7.1   Function

LFO means "Low Frequency Oscillator"; an LFO is a modulation source providing relatively slow periodic signals for modulating synthesizer parameters. The RozzBox is equipped with two LFOs with different functional ranges. Their parameters can be edited via "Page A" (LFO 1) and "Page B" (LFO 2).

LFO 1 supplies you with the three standard waveforms Triangle, Sawtooth and Square, as well as Sample and Hold (random values).

5.7.2   LFO 2 Special Modes

„Wave"	LFO renders User Wave 1.
„Tracking"	LFO uses envelope 1 to address one of the two user waves. You can imprint the user waveform on the envelope.
	You can select User Wave 1 (left half) or User Wave 2 (right half) with the "Speed/Wave" dial.

☞ **Reference:** The User Waves can be created by the user. Please refer to chapter 5.8.4 "Interpolation of User Waves".

5.7.3   LFO Synchronization to MIDI Clock

The RozzBox enables you to synchronize the LFOs to MIDI clock. For this there are several parameters available in the menu (menu points #19 through #22).

First of all synchronizing can be activated for each LFO via the [LFO x MIDI Sync] parameter.

The [MIDI Sync Clock Divider] parameter (menu point #21) determines the ratio between one LFO period and one measure of the sequencer sending the MIDI clock.

The [MIDI Sync Clock Offset] parameter determines the LFO starting note offset. It is edited in quarter notes.

5.8   The Sequencer
5.8.1   Function

The RozzBox sequencer is used for automatically playing melodies as well as for the complex modulation of synthesizer parameters.

The sequencer data are stored within the patch. Importing the sequencer data of another patch is also possible. Please refer to chapter 7.1.

One RozzBox voice consists of four separate sequencer lines with 16 steps each. Depending on the running mode the steps are activated sequentially following the clock input of that sequencer line.
The sequencer lines have got a Reset function setting the active step to step 1.
Moreover, the sequencer lines can be activated or de-activated via Start and Stop inputs.

The parameters for one sequencer line are:

1. the values of the 16 steps themselves
2. the [Dimension] parameter determining the number of steps used in the sequencer line
3. the [Running Mode] parameter the sequential order (the running mode) of the steps
4. the [Quantize] parameter

The first three parameters are edited via their respective sequencer pages, the fourth one is only editable via the menu (#24 and #27).

5.8.2   Organization and Patching

Each sequencer line has got four trigger inputs as well as two trigger outputs. These signals can be connected via the trigger matrix (refer to chapter 5.10).

The trigger inputs are::

SEQ Clock	A trigger signal connected to this input forwards the sequencer line by one step.
SEQ Reset	A trigger signal connected to this input resets the sequencer line.
SEQ Start	A trigger signal connected to this input activates the sequencer line.
SEQ Stop	A trigger signal connected to this input de-activates the sequencer line.

The trigger outputs are:

SEQ Gate	If the active step is > 50%, a trigger signal is generated.
SEQ Duration	his trigger signal is active until LFO 1 value has passed the value selected for the active step. This output enables you to realize different trigger lengths for each step; "Sawtooth" is recommended as LFO 1 waveform.

In addition to these trigger outputs there is of course the normal "analog" sequencer output. This output can be patched via the modulation matrix (please refer to chapter 5.9).
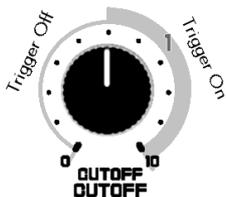
From each step the trigger values are derived at the same time, as you can see from the sketch. The RozzBox concept does not provide any dedicated trigger tracks - but of course can use one of the sequencer lines as an exclusive trigger track.

It is completely up to you how you patch these sequencers. Here is an example for what you can do:

Suppose you need a classical sequencer with 16 steps playing a short sequencer line. You want to edit the pitch, the filter frequency and the gate length. The whole thing is supposed to be triggered by LFO 1.

For this task you need three of the four sequencer lines, and you proceed like this:

What to do?	Why?
Select "Sawtooth" as LFO 1 waveform. Set LFO 1 to medium speed.	"Sawtooth" is required in order to control the different gate lengths via "SEQ Duration". Other waveforms can result in interesting results:)
Connect LFO 1 to trigger input SEQ 1 Clock via trigger matrix.	LFO 1 is supposed to trigger the sequencer and therefore the playback speed.
Connect LFO 1 to trigger input SEQ 1 Start via trigger matrix.	This activates Sequencer 1 step control.
Select "Forward" as SEQ 1 running mode.	In this mode the sequencer runs from step 1 through step 16 and starts again with step 1.
Select "Follow 1" as running modes for SEQ 2 and SEQ 3.	Now SEQ 2 and SEQ 3 run synchronized to SEQ 1.
Connect SEQ 1 with destination "Pitch" via modulation matrix and edit the amount up to taste.	Sequencer line 1 is supposed to control the pitch.
Connect SEQ 2 with destination "Filter 1 Cutoff" via modulation matrix and edit the amount up to taste.	Sequencer line 2 is supposed to control the cutoff of Filter 1.
Connect "SEQ 3 Duration" with trigger inputs "ENV 1 Trigger" and "ENV 2 Trigger" via trigger matrix.	Now sequencer line 3 controls the gates of both envelopes.
Edit the sequencer lines to taste.	…and the sequencer happily noodles away your sequence!

☞ **Reference:** Before you run away screaming… :-) …there is some finally good news: It doesn't have to be this complicated!
There are trigger presets available for standard sequencer applications, loadable by a push of a button. Now the desired trigger matrix connections are made all at once. Please refer to chapter 5.10.3 "Selecting of Trigger Matrix Presets".
These presets do not provide any connections of the modulation matrix (for the "analog" outputs of the sequencer lines), and they do not include any sequencer values.

5.8.3   Running Modes and Quantization

The sequencer is capable of different running modes, which are described here:

[Seq Running Mode]	Description
0	Forward
1	Backward
2	Bounce (Forward and Backward in turns)
3	Random
4	OneShot (sequencer stops with the last step)
5	Follow 1 (sequencer follows SEQ 1)
6	Follow 2 (sequencer follows SEQ 2)
7	Follow 3 (sequencer follows SEQ 3)
8	Follow 4 (sequencer follows SEQ 4)

You can select quantization ([SEQ 2 Quantize] parameter) for sequencer lines 1 and 2, re-calculating the continuous value into 16 steps.
When the modulation amount values in the modulation matrix are correct, a semitone scale is obtainable, which makes programming melodies easier.
Quantizing can be activated for sequencers 1 and 2 separately via menu points #24 and #27.

5.8.4   Interpolation of User Waves

Sequencer 4 has got an extraordinary additional function: Your RozzBox can interpolate a user waveform from its values. From the 16 values for the sequencer steps a ramp waveform is calculated which is available as a user wave in the oscillators.

For the use of this function at least one oscillator must be playing user wave 1 (please refer to chapter 5.1.1).

Then you change to "Page S4" and edit the values of the steps for the ramp waveform and Press "Enter". The RozzBox now executes the necessary calculations and data transfers in lightning speed, and the waveform played by the oscillator should change.

It is also possible to store the result of the interpolation in user wave 2. This is done via menu point #76.

5.9.   The Modulation Matrix
5.9.1   Function

The RozzBox is equipped with a modulation matrix enabling you to patch modulation sources and destinations. After selecting a source and a destination you can edit the modulation amount, i.e. the intensity of the source modulating the destination. This amount can also be negative. In center position there isn't any modulation happening.
The RozzBox supplies you with 16 sources and destinations of which only four are printed on the front plate. The other sources and destinations are selected via fade-in parameters (please refer to next chapter).

5.9.2   Selecting Additional Sources and Destinations

With this aid you can select all the modulation sources and destinations available in the RozzBox for each modulation knot.

When you select a modulation source via the slide switch, the display shows "Source MODx" with a little text label for the selected modulation source, e.g. "ENV 1", which you can change via the "+" and "-" keys. This fade-in disappears again after approximately two seconds.
The same happens with destinations - in that case the display shows "Destination MODx".

5.10   The Trigger Matrix
5.10.1   Function

The trigger matrix is used for the free connection of trigger signals. Similar to the modulation matrix you can connect sources and destinations. In contrast to the modulation matrix, the playground of the trigger matrix is the management of digital triggers which know only two states: trigger on and trigger off.
One more difference is the unlimited number of trigger connections in the RozzBox.

The MIDI gate is a simple example for a trigger signal.
The information carried by this signal is the "MIDI note on" or "MIDI note off" message, or put simply, if a key is pressed or not.
When you press a key on your keyboard and the RozzBox plays a note, in most cases you have triggered an envelope, and ENV 2 has opened the VCA so you can hear the oscillators.
The fact that the envelopes have been triggered is a result of the trigger connections between MIDI gate and the envelope trigger input "ENV Trigger".

This connection is a rather simple example of a trigger connection running via the trigger matrix in the RozzBox. Usually this is a permanent connection in synthesizers; the RozzBox enables you to deactivate this connection - which is useful only in special cases, of course.

The resetting of an LFO with every keystroke is a slightly more practical example; in this case the trigger source "MIDI gate" has to be connected to the trigger destination "LFO 1 Reset" via the trigger matrix.

Another example would be the forwarding of sequencer steps (trigger destination "SEQ Clock") with an LFO (trigger source "LFO 1"), the MIDI gate or the trigger output of another sequencer.

5.10.2   Connecting/Disconnecting of Trigger Matrix Points

The connecting and disconnecting of trigger matrix points is done via the menu system of the RozzBox.

Example 1: **Connect** *MIDI gate to LFO 1 Reset*
Select menu point "Connect" (#35) as described in chapter 4.3.

The display shows "Connect" and a trigger source. Select the desired trigger source ("MIDI gate") with the "+" and "-" keys and press "Enter".
The display now shows "Connect to:" and a trigger destination. Select the desired trigger destination ("LFO 1 Reset") with the "+" and "-" keys and press "Enter".

The connection in the trigger matrix is now activated.

Example 2: **Disconnect** *the connection of MIDI gate with LFO 1 Reset.*

Select menu point "Disconnect" (#36) and a trigger source. Select the desired trigger source ("MIDI gate") with the "+" and "-" keys and press "Enter".
The display now shows "Disconnect from:" and a trigger destination. Select the desired trigger destination ("LFO 1 Reset") with the "+" and "-" keys and press "Enter".

The connection in the trigger matrix is now deactivated.

5.10.3   Selecting of Trigger Matrix Presets

Trigger matrix presets are ready-made configurations of the trigger matrix, which you can select instead of the free setting via single connections (refer to chapter 5.10.2).

Please select menu point "Presets" (#39) as described in chapter 4.3. Select the desired preset and press "Enter".

Preset	Description
00	**4-track modulation sequencer** LFO1 triggers Sequencer 1 Sequencers 2-4 run in sync
01	**4-track modulation sequencer** MIDI Clock triggers Sequencer 1 Sequencers 2-4 run in sync
02	**3-track sequencer with a note length track** LFO1 triggers Sequencer 1 Sequencers 2-4 run in sync Sequencer 2 triggers both envelopes (duration)
03	**Melody sequencer with note length plus independent 2-track modulation sequencer** LFO1 triggers Sequencer 1 Sequencer 2 runs in sync Sequencer 2 triggers both envelopes (duration) LFO2 triggers Sequencer 3 Sequencer 4 runs in sync to Seq 3
04	**Arpeggio sequencer from sequencer tracks 1 and 2 Independent 2-track modulation sequencer** LFO1 triggers Sequencer 1 (rhythm sequencer) Seq 2 triggers Sequencer 2 (pitch sequencer) LFO2 triggers Sequencer 3 Sequencer 4 runs in sync to Seq 3

You can disconnect all connections via menu point "Reset" (#37). Just select this menu point and press "Enter".

Menu point "Default" (#38) disconnects all connections and activates all standard connections (both envelopes are triggered by MIDI gate). Just select this menu point and press "Enter".

5.10.4   Chart of Trigger Sources and Destinations

Triggermatrix Source	Triggermatrix Destination
Midi Gate (Voice)	ENV 1 Trigger
Midi Gate (all)	ENV 2 Trigger
LFO 1	LFO1 Reset
LFO 2	LFO2 Reset
Envelope Follower	SEQ 1 Clock
MIDI Control	SEQ 1 Reset
SEQ 1 GATE	SEQ 1 Start
SEQ 1 DUR	SEQ 1 Stop
SEQ 2 GATE	SEQ 2 Clock
SEQ 2 DUR	SEQ 2 Reset
SEQ 3 GATE	SEQ 2 Start
SEQ 3 DUR	SEQ 2 Stop
SEQ 4 GATE	SEQ 3 Clock
SEQ 4 DUR	SEQ 3 Reset
MIDI Clock (16tel)	SEQ 3 Start
MIDI Gate (invert.)	SEQ 3 Stop
-	SEQ 4 Clock
-	SEQ 4 Reset
-	SEQ 4 Start
-	SEQ 4 Stop

5.11.   The "Page Switcher"
5.11.1   Function

The "Page Switcher" is a function that enables you to switch complete synthesizer settings sequentially. This allows for sequentially playing completely different sounds within one sequence.

The organization of the synthesizer data to be switched between is done in four "Pages" containing one complete synthesizer setting each. E.g. the parameter "OSC 1 Tune" can be found in each set and can have four different values.

In default mode the "Page Switcher" is deactivated. Thus you only edit "Page 0" of a patch, though potentially four complete sounds can be stored within one patch.

The "Page Switcher" is controlled by sequencer 1. Once activated, the sequencer activates the previously programmed "Pages" according to the setting of the current step.

5.11.2   Patch Data Organization

You can see the organization of the four pages within a patch from the sketch below. Every patch can store four sets of synthesizer data and one set of sequencer data.
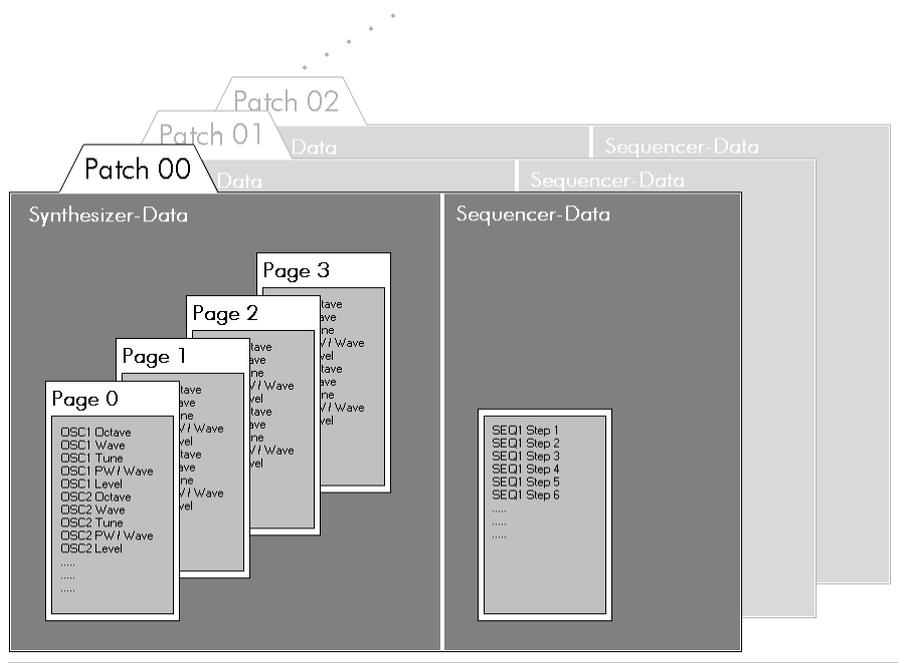
5.11.3   Using the Page Switcher

Before activating the Page Switcher you should program different synthesizer settings into the pages.

The currently edited page can be selected via menu point #34 ([Switcher Page Edit] parameter). Here a very useful additional function can also be found enabling you to copy your Page 0 patch data to Pages 1, 2 and 3 automatically (simply select menu point #4 and press "Enter").

ⓘ   **Note**: It is essential for patch settings concerning the sequencer to be edited as desired on all pages (e.g. LFO1 waveform and sync settings if LFO1 works as a trigger source or modulation matrix connections for sequencer tracks in case more than one sequencer track is used). Otherwise strange things could happen, because the sequencer might change its own parameters - but that might be desired as well!

As long as the Page Switcher is not activated, the currently edited page is also used for sound generation - or put simply: When you edit Page 02, you hear Page 02.

Once you have your desired sounds on the pages, you should take care that sequencer 1 can run on all Pages and gets the correct trigger signals.

If you activate the Page Switcher now via the [Page Switcher Running Mode] parameter (menu point #33), it switches all the synthesizer values to the values of the active page in accordance with the currently active steps of the sequencer.
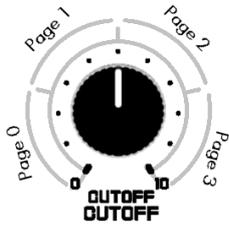
The pattern of the changing sounds can be selected and edited via the step dials of sequencer 1 (Page S1). With each active step the corresponding page is selected.

5.12   Overview of Rozzy Functions
5.12.1   Sample Rate and Bit Resolution Reducer

The "S. Rate" switch halves the internal sample rate and can be used to imprint a lo-fi character onto the RozzBox sound.

You can edit the internal bit width of the signal path via the "Bit Res" dial. Computer scientists will know exactly what's going on…
If you reduce the bit width only a bit (pun intended), the sound will only change subtly; you will need a drastic bit width reduction to get really rozzy results!

✏ **Tip:** Use this function to create wicked, biting lead sounds or digital-sounding 8-bit computer game sounds. If you use it sparingly, it can actually result in more organic sounds.
If you don't want any bit width reduction, please turn the dial fully clockwise (16 bit).

ⓘ **Note**: These functions are located prior to the analog filter within the signal path. If the analog filter is used, the effects are not as audible. If a digital sound is desired, it is advisable to use only the digital filter and bypass the analog filter.

5.12.2   Filter Chaos

This, too, is a typical RozzBox function capable of producing some really weird and wrecked sounds. It is difficult to explain what actually is actually happening once you activate Chaos mode. In short: If you activate it, the filter shows a chaotic behaviour which is dependent on Resonance, Cutoff and filter input amplitude. This results in wild fizzing, crackling and coloured noisy sounds.

ⓘ **Note:** This function is completely useless for producing musical sounds in a narrow sense of the word. Have fun!

5.12.3   Digital Clipping within the Mixer

This is one of the four distortion modes available in the mixer (please refer to chapter 5.4 "The Mixer"). It is mentioned separately here because the term "distortion" only partly explains what this mode is capable of doing.

When the oscillator mix exceeds a certain level, the RozzBox usually compensates for this in order to prevent internal "digital overflow". In "Digital Clip" mode the possibility of "digital overflow" remains - that means that amplitude values above the permitted range are mirrored into the lower range.

The resulting effect is a kind of a wave-shaper implanting hard edges to the mixed oscillator waveforms. Two oscillators are all you need to gain a vault of harsh sounds by experimenting with different frequency relations and oscillator levels.

5.12.4   Oscillator Aliasing

This is what happens when a digital oscillator produces frequencies relatively near to the sample frequency of the converter. It is especially audible if you select a sawtooth wave without any further editing and play rather high notes.

In hardware and software synthesizers this effect is usually filtered out by means of a high calculating effort. Your RozzBox is capable of switching this anti-aliasing filter on and off with the "Alias" slide switch on the front plate.

🖉   **Tips for using this effect:** The possibilities of aliasing exceed the "scale gone wrong" in higher note ranges. If you modulate the pitch of an aliasing oscillator you get several swirling developments of frequencies at once, with only one oscillator. If you produce VERY high frequencies with one oscillator, you will enter VERY strange territories. Experiment, and modulate oscillator frequency with just one LFO. Remarkable effects will be the result.

5.12.5   The "Hacker"

Again, the "Hacker" is a function very special to the RozzBox. It enables you to add high frequency edges to the output signal resulting in aliasing-like effects. The hacking frequency is defined by oscillator 1 and/or oscillator 2 and can therefore be modulated in completely variable ways. It doesn't matter whether or not the controlling oscillators are audible or are muted via the corresponding [Level] parameters.
Now you can imprint aliasing effects also to signals filtered analog-style without A/D-converting them in advance.

☞   **Reference:** It might be useful to remember that you can deactivate pitch tracking of oscillator 1. For further details please refer to chapter 5.1.2.

5.12.6   OSC Mix

The Modularion Source „OSC Mix" can be used for very weird modulations. It is the mixed Waveforms of all four Oscillators.

5.13   Additional Functions
5.13.1   Glide

You edit the Glide time with the "Glide" dial, which results in a kind of portamento (nicht Glissando - Glissando hat Stufen, Portamento nicht; bitte auch in der deutschen Anleitung ändern) effect. In counter-clockwise position the effect is deactivated.
For those who want to know exactly: The Glide generator is located between keyboard/pitch-modulation and oscillators/key-tracking, meaning that Glide also effects filter key tracking, and that modulations using "Pitch" as the destination are also handled via the Glide generator (for the experts: "Slew Rate" can then be edited with the Glide dial).

5.13.2   Permanently Opening the VCA

You can open the VCA permanently via the "Vol" switch (on "thru"), which deactivates all other VCA control. This can be useful for editing external signals, because no further MIDI device is needed for opening the VCA.

6   Multi Mode
6.1   Function and Organization

The multi mode within the RozzBox is only useful for polyphonic models (for obvious reasons). It enables you to allocate the five internal voices to different "parts", which can produce different sounds and react to different MIDI channels.

How the five voices are distributed to the five parts (maximum) is determined by the global mode, which can be edited via menu point #40.

The settings for global mode, the parts and their allocated MIDI channels, patch numbers, note offset, fine tune and note range can be stored in 100 "Multis", independent from the actual sound data.

6.2   Chart of Global Modes

Globalmodus	Description
00	Polyphonic voice allocation, five voices
01	Monophonic voice allocation, one voice
02	Monophonic voice allocation, five voices (unisono)
03	Multimode: Part 1: five voices
04	Multimode: Part 1: two voices Part 2: three voices
05	Multimode: Part 1: one voice Part 2: four voices
06	Multimode: Part 1: one voice Part 2: two voices Part 3: two voices
07	Multimode: Part 1: one voice Part 2: one voice Part 3: one voice Part 4: two voices
08	Multimode: Part 1: one voice Part 2: one voice Part 3: one voice Part 4: one voice Part 5: one voice

6.3   Editing Different Parts

Editing Different Parts

When the Rozzbox is in Multi Mode, sound edits, e.g. via turning a dial, are forwarded to only one part. You can select that part via the [Part Edit] parameter (menu point #41).

In addition to that you can also send control or NRPN messages to the selected MIDI addresses via MIDI.

Furthermore you can edit three selected parameters simultaneously for all parts. Please refer to chapter 7.5 "Multi Control".

6.4　　　　Setting up a Part

Part Parameter Name	Menu point No (for Part 1)	Description
MIDI-Channel	42	Sets the MIDI channel on which this part receives note, controller and NRPN data. Set to 0, it ignores incoming messages.
Patch	43	Sets the patch number of this part of the Multi. Pressing "Enter" is necessary for loading if this parameter is to be changed!
Detune	44	Sets fine-tuning of this part
Note-Offset	45	Sets the note offset of this part (Transpose up).
Range from	46	Sets the note range that this part reacts to messages.
Range to	47	

6.5　　　　Saving and Loading of Multi Programs

To store a Multi program select menu point "Save Multi" (#72). You can now select the desired program number via the "+" and "-" keys. If you press "Enter" afterwards, the Multi program is stored.

To load a Multi program select menu point "Save Multi" (#73). You can now select the desired program number via the "+" and "-" keys. If you press "Enter" afterwards, the Multi program and all patches that Multi refers to are now loaded. This might take a few seconds.

7　　　　Global Functions
7.1　　　　Import Functions

The RozzBox enables you to import sequencer and user wave data from other patches into the current patch.
To do this simply select the desired menu point (Import Wave 1 or 2 or Import Sequencer, menu points #77 to #79), press "Enter", select the source patch number and press "Enter" again.

7.2　　　　MIDI Reset

In case of a stuck MIDI note there is help with the "MIDI Reset" function (menu point #85). This function switches off all active MIDI voices.

7.3   MIDI Filter

The MIDI input of the RozzBox can filter out incoming MIDI message types as you wish. You can activate independent filters for "Patch Change", Controller" and NRPN" messages - the RozzBox then won't react to these data any more.
These filters are selectable via menu points #87 to #89. Please note that "On" means that the filter is active!

MIDI filter settings are automatically stored, but can be altered at any time.

7.4   „Filter Swap"

As explained in chapter 5.5, the RozzBox uses two filters for one patch. Usually the parameters for Filter 1 are accessible via Page A, whereas on Page B you can access the parameters for both filters.

For many sounds you will probably only use one of the two filters. If you generally prefer working with Filter 2, you can select Filter 2 (instead of Filter 1) to be accessible from Page A.
To achieve this, set menu point "Filter Swap" (#84) to "On". Now you edit Filter 2 instead of Filter 1 on Page A. There won't be any changes to Page B.

7.5   MultiControl

During a live performance it might be desirable to be able to edit performance-relevant parameters of more than one part. The RozzBox enables you to do this via the "MultiControl" mode, with the user interface (the front plate) taking over an alternative function.
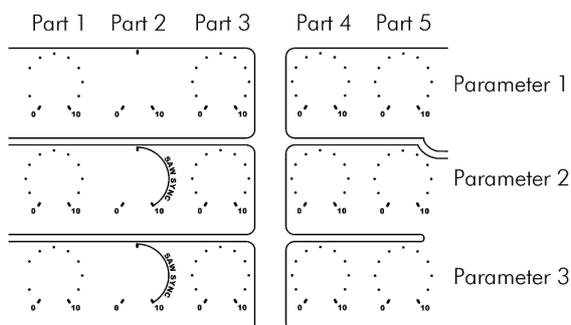
You can define three parameters to be controlled for all parts simultaneously in "MultiControl" mode.

This is visualized on the sketch to the left.

The parameters for the three rows are selectable via menu points #81 to #83. The assignments can be found in Appendix A "MIDI Specifications". In the NRPN assignments chart you find the Spalte "NRPN LSB #98" - these are the correct values for selecting the "Filterbank" mode.

The "Filterbank" settings are stored automatically (non-volatile) and can be altered at any time.

7.6   MIDI Out Configuration

The RozzBox MIDI output jack can be defined as "Out" or "Thru" via this menu point. This setting is edited via menu point #90 and is stored non-volatile.

With the output set to "Out" the RozzBox sends controller data when the front plate knobs are being used. MIDI data received at the MIDI input are not forwarded.

With the output set to "Thru" incoming MIDI data are forwarded, but no controller data are transmitted.