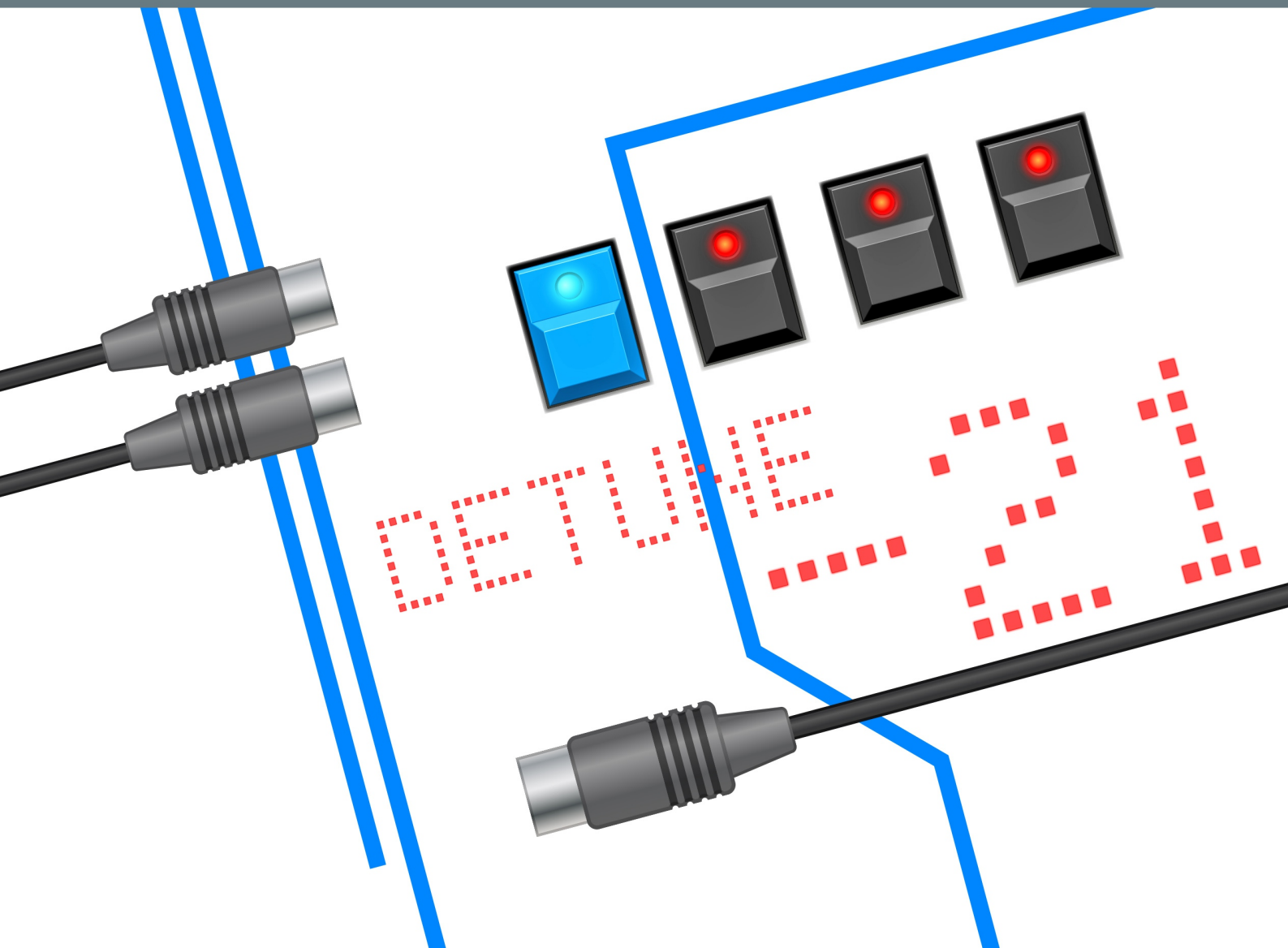


STEREOPING

SYNTH PROGRAMMER

FOR OBERHEIM MATRIX 6/6R/1000



OWNER'S HANDBOOK



<i>General features of the Synth Programmer</i>	3
<i>Features Matrix Edition</i>	3
<i>Matrix Firmware Update</i>	3
<i>Technical handling</i>	3
1.Connections and integration into your setup	4
<i>Power supply</i>	4
<i>Midi connections</i>	4
2.Info & settings Matrix 6 / 6R	5
<i>Problem 1 – laging parameters being changed over midi</i>	5
<i>Problem 2 – some parameters not reacting at all</i>	5
<i>Problem 3 – no editbuffer</i>	5
<i>Restrictions for using the Synth Programmer together with the Matrix 6 OS V2.13</i>	5
<i>OS-Update 2.14/2.15 from Rob Grieb</i>	6
<i>Restriction for using the Synth Programmer with the Matrix 6 OS V2.14</i>	6
<i>Restriction for using the Synth Programmer with the Matrix 6 OS V2.15</i>	6
<i>Settings on Matrix 6 and Programmer</i>	6
3.Info & settings Matrix 1000	7
4.Overview	8
<i>Function keys</i>	8
<i>PLAY Mode</i>	8
<i>Button 'PREFS'</i>	8
<i>Button 'COMPARE'</i>	8
<i>Button 'CHORD'</i>	8
<i>Button 'MATRIX'</i>	8
<i>Button 'RAND'</i>	8
<i>Button 'PEEK'</i>	9
<i>Button 'PATCH'</i>	9
5.PLAY Mode	10
<i>Encoder 4</i>	10
<i>Turn dial 'Volume'</i>	10
<i>Turn dial 'Detune/Prs'</i>	10
<i>Parameter groups</i>	10
<i>Hanging notes – Midi Panic</i>	11
6.MATRIX Mode	12
<i>Direct selection of most targets through pots</i>	12
<i>Matrix 6/6R exception</i>	12
<i>Value Speedup per Poti</i>	12
<i>Temporarily deactivating Modulation slots</i>	12
7.RANDOMIZER	13
8.PATCH Mode	14
9.PREFS und MIDI BYPASS MODE	15
<i>Midi Bypass Mode</i>	15
10.CHORD MEMORY	16
<i>Triggernotes</i>	16
<i>Chord Setup</i>	16
<i>Learning modes 'Toggle' and 'Hold'</i>	16
11.CC to SysEx translator	17
12.Updating Firmware	18
13.Matrix 1000 hints	19
14.Init Patch	20
15.Imprint	21

General features of the Synth Programmer

The Stereoping Programmer offers 45 control dials, 4 endless encoders and a 16x2 characters OLED display to for convenient and intuitive sound shaping on your Matrix 1000 / 6 / 6R. At the moment you turn a knob, the programmer sends the suitable command into your synthesizer which immediately changes it's sound.

- Highly specialized hardware midicontroller for Oberheim Matrix 1000 / 6 / 6R
- Convertable from 19" rackmount to desktop usage – and back
- 45 dials, 4 encoders, 2x16 character oled display
- Firmwareupdate over SysEx-Dump
- Current draw 100 mA
- Weight 2.650g
- Size without rackmount brackets, incl. knobs and rubber feet ca. 430 x 130 x 85 mm

Features Matrix Edition

- Visual design suitable to Matrix 1000
- all Program parameters accessible from the Programmer
- quick and simple access to the modulation matrix
- patch change automatically updates the Programmers parameter memory
- Targeted synth (M1000/M6) as well as Synthesizer's Firmware version selectable in Programmer's preferences: for optimal response with each combination
- 'Midi CC' to 'SysEx'-translator to automate your Matrix with ordinary CC-messages
- Patch-Randomizer
- 6 voice Chord Memory with 6 saveable Chord-Slots

Matrix Firmware Update

We highly recommend getting one of the firmware updates for your Matrix1000 or Matrix 6 described below. Due to copyright issues you cannot get them from Stereoping directly though.

Technical handling

The Synth Programmer was built to be used in a comfortable music studio environment. You can operate it under free skies of course. But please keep in mind, it uses electricity for proper operation and therefore is quite sensitive to water, drinks or other fluids. Excessive heat or exposition to sunlight is also not advised.

Your programmer has got a neat OLED display. The OLED technology is quite young. As none really can guarantee how long it will keep it's perfect function after displaying the same content for hours or even days, we integrated a screensaver to mutiply the lifetime of the display. If the programmer is not touched for longer than 23 minutes it will fall into screensaver mode and switch the OLED display off – the LEDs in the buttons above the display will start to blink slowly. The programmer awakes immediately if a knob is moved or notes are being sent through it.

Some 'No-need-to-worry' information: the datasheet of the display claims 50.000 hours until it has lost 50 % of it's brightness. If you would use your programmer 5 hours on each day of the year this will take over 27 years – even with deactivated screensaver.

1. Connections and integration into your setup

Power supply

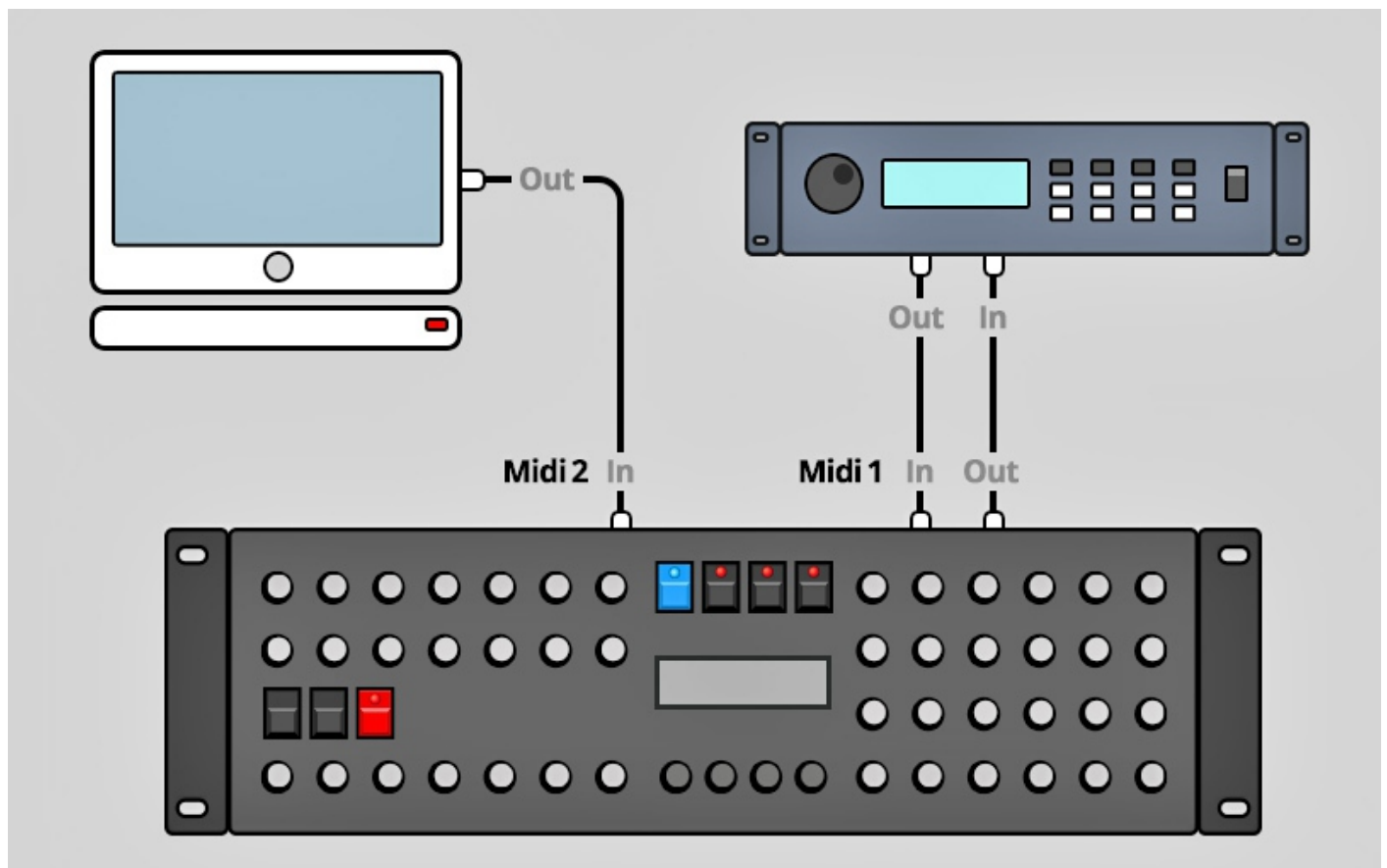
You can use any ordinary 9 Volt DC powersupply to operate your controller. The connector should have **Plus on it's center pin** and Ground - sometime labeled as 'Minus' - on the outside. The Synth Programmer has a protection diode for not doing any harm if the polarity of the power supply is wrong, it just won't work. The current of the PSU should at least offer about 200 mA (=0.2 A). If it supplies more current (e.g. 500mA) this is fine and won't cause problems.

Please do NEVER use a powersupply which has an 'AC'-Output. AC means alternate current. AC-PSUs have the letter combination AC/AC or a sinewave symbol besides the word 'output'.

Midi connections

The Stereoping Programmer has 3 Midi jacks which should be cabled like that:

- **MIDI 1 - OUT** -> MIDI IN of your Synth
- **MIDI 1 - IN** -> MIDI OUT of your Synth
- **MIDI 2 - IN** -> MIDI OUT of your Midi interface/sequencers/keyboards



Both jacks of Midi 1 connect the Programmer with your synth in a loop. This seems unconventional but it is necessary: the Synth Programmer must hold the same patch data in it's memory as your Matrix. This data exchange runs through **MIDI 1 IN / OUT**.

A Synthesizer would not make any sense if it could not receive midinotes, modulation wheel changes etc. These are coming into the programmer over the **MIDI 2 IN** jack from your keyboard/DAW/sequencer. They will be merged with your parameter changes and sent together to the synthesizer.

2. Info & settings Matrix 6 / 6R

Once upon a time there was a Matrix 1000, having an elder, slightly dull-witted brother, the Matrix 6 with an operating system for unknown reasons left 'imperfect' (last official: **V2.13**). Until now it therefore still suffers from problems when someone tries to change it's parameters over midi. As the Matrix6 is capable to sound simply magical – maybe even a bit cuter than the Matrix 1000 – we tried everything possible to open it's lukewarm heart to us nevertheless. Since OS update versions **2.14/2.15** from Rob Grieb everything looks much better, more on the OS updates below.

The following text is about the Matrix's issues with it's original OS V2.13. We describe the main problems as well as the solutions, the Programmer offers. For keeping frustration at minimum when using the Programmer with the Matrix 6 it is highly recommended to read the following.

Problem 1 – laging parameters being changed over midi

Due to the Matrix 6's hardware architecture many parameters react quite awkward when trying to change them over midi. These parameters are sent by the Programmer with a timedelay or – in other words – not updated so often per second, to allow the Matrix completing it's tasks before getting the next command. Using the full data speed midi allows would risk the Matrix 6 to hang up.

Problem 2 – some parameters not reacting at all

Some parameters do not react at all when trying to change them with the normal 'Parameter-Change' commands:

- the complete modulation matrix
- negative values for bipoar modulations (e.g. DCO1 PW<LFO2 -15, ENV 2 VELOCITY -01, ...)

Of course we want to change these nevertheless. In such cases the Programmer sends the whole program to the Matrix 6. This takes a tiny bit longer than an ordinary 'small' parameter change command. Ringing notes will be cut off. But it works quite perfect.

Problem 3 – no editbuffer

An 'editbuffer' is a memory holding the current patch data; a copy of the patch as it was read from memory. The Matrix6 offers such an edit buffer but it refuses cooperation when trying to fill it over midi. Means: patch dumps are always written into the program memory – like a real saving – overwriting your current program! The Synth Programmer offers a COMPARE funktion to revert to the original program as it was read from the Matrix 6's memory – as long as you do not switch the Programmer off or jump to another program. Nevertheless the clear warning: **when working on patches being important to you – please work on a copy of it on another patch number.**

Restrictions for using the Synth Programmer together with the Matrix 6 OS V2.13

For any changes of the modulation matrix and the negative values of bipolar parameters the whole patch will be dumped into the Matrix. Consequences:

- Changes will not be displayed on the Matrix 6 itself
- Changes behave not that smooth and are cutting held/ringing notes
- **the currently selected patch in Matrix will be overwritten!**

General restrictions about Midi Parameter Change commands:

- some paras like e.g. Cutoff react sluggish
- some paras like e.g. bipolar fixed modulations (DCO1<LFO1, VCF F<ENV1 etc.) react very sluggish

OS-Update 2.14/2.15 from Rob Grieb

To the end of 2016 Rob Grieb (www.tauntek.com) released a firmware update for Matrix 6 (V2.14) solving or improving many of the previously described issues. Many parameters – especially bipolar fixed modulations – can be changed much more fluently, negative modulations can be changed normally without having to send the whole patch ('DETUNE' not working below V2.15). For getting the new firmware in your Matrix 6 you have to change the EPROM chip with the firmware against your old one holding V2.13. Bob sells them directly, in Germany the official reseller is www.untergeek.de.

Restriction for using the Synth Programmer with the Matrix 6 OS V2.14

For any changes of the modulation matrix and the negative values for DCO2 Detune the whole patch will be dumped into the Matrix. Means:

- Changes will not be displayed on the Matrix 6 itself
- Changes behave not that smooth and are cuttin held/ringing notes
- **the currently selected patch in Matrix will be overwritten!**

Restriction for using the Synth Programmer with the Matrix 6 OS V2.15

For any changes of the modulation matrix the whole patch will be dumped into the Matrix. Means:

- Changes will not be displayed on the Matrix 6 itself
- Changes behave not that smooth and are cuttin held/ringing notes
- **the currently selected patch in Matrix will be overwritten!**

Settings on Matrix 6 and Programmer

Please enter MASTER EDIT menu on the Matrix 6 and set the following values:

- 00 BASIC CHANNEL - should be set to the same midichannel as the Programmer is set
- 03 PATCH CHANGES: ON – *to allow automatic synchronisation of Programmer and Synth*
- 04 SYSTEM EXCLUSIVE:
 - Firmware V 2.13: **ON** – *otherwise the Matrix 6 does not listen to SysEx parameter changes*
 - Firmware V 2.14 & 2.15: **+2** – *otherwise negative modulations will not work*
- 12 MIDI ECHO: ON – *Program Change commands of the Programmer will be echoed through the Matrix engaging a patch request command. This allows patch selection on the Programmer itself.*

Settings on the Synth Programmer

- PREFS 1/6 MIDICHANNEL - should be set to the same channel as the Matrix 6
- PREFS 2/6 SYNTH – select your Synthesizer and OS-Version, for Matrix 6: 2.13, 2.14 or 2.15. Check the OS Version of your Matrix through MASTER PARAMETER 54.

Important: **saving a patch must be done on the Matrix itself**, the Programmer does not offer any possibility to save your patch or ask the Matrix to do so. But as we learned above: some parameter/OS combinations and changes on the mod matrix need the whole patch to be sent into the Matrix 6, with the consequence it is saved at the same time.

The dial labeled 'VOLUME' in the upper right corner sets 'VCA1 Volume' on the Matrix 6 as the Matrix 6 does not respond the Midi Volume (CC#7).

The Matrix 6 only reacts to incoming Midi SysEx Parameter commands when being in **QUICK EDIT** mode. The Synth Programmer sends a little command to let the Matrix jump into this mode on each parameter change.

3. Info & settings Matrix 1000

Things are much simpler for the Matrix1000 in contrast to the Matrix 6. It's latest official OS was V1.11. There are some alternatives in the meantime. The most common two:

- OS V1.16 from gligli - <http://gliglisynth.blogspot.de/2014/11/matrix-1000-rom-only-upgrade-v116.html>
- OS V1.20 from Rob Grieb - <http://www.tauntek.com/>

Both OS alternatives follow different strategies to overcome the Matrix1000's issues, therefore each got it's advantages and downsides. Now what is the difference? Which is better? Roughly we'd say the following: on V1.20 there are more parameters running a bit better, e.g. Pulsewidth & Wave for DCO2. In contrast some other ones – as the more important 'ENV 1,2,3 AMP<VELO' - behave worse than in V1.16.

In contrast to OS V1.13 both are surely a huge improvement. Compared to each other, there is not that big difference. 'V1.20' for being higher than 'V1.16' does not mean it is better, faster or offering more features. The lovely and important **UNISON DETUNE** is supported by both. The Programmer tries to squeeze the best out of each OS. This is why you can change it in the PREFS.

Settings on Matrix 1000:

- CHANNEL should be set to the same midichannel as the Programmer is set
- MIDI ECHO must be set to OFF. Otherwise Program Change commands will be echoed back to the Programmer causing a loop and errors. In short how to switch it off:
 - press SELECT on the Matrix until the LED of EXT. FUNCTION is bright
 - Press key '2'
 - Use minus-key to set parameter to 'EoF'

Settings on the Synth Programmer:

- PREFS 1/6 MIDICHANNEL- should be set to the same channel as the Matrix 1000
- PREFS 2/6 SYNTH allows selecting your Matrix 1000 OS version (1.11, 1.16, 1.20). The Matrix 1000 shortly displays it's OS version on powerup.

For Matrix1000 it's the same as for the M6: **saving** a patch must be done on the synth itself, the Programmer does not offer any possibility to save your patch or call the Matrix to do so. In case you gorgot the saving procedure: hold 'ENTER' and press a number between 000 and 199.

4. Overview

Let's take a quick look on the user interface first. Details to the different modes and buttons are following behind – if necessary at all.

The 45 turn dials are – you guess it already – for direct changing of the parameters of the Matrix.

The 4 endless encoders are for finetuning values on features tweaked best in fine steps and with a display. There are 4 lines, each starting on an encoder and ending in a corner of the display. This should help finding the right encoder of the parameter you want to change.

The 7 buttons change main modes, allow program comparison or control the Chord Memory. The 4 buttons above the display sometimes have a secondary function:

Function keys

In modes like MATRIX, COMPARE, CHORD SETUP, RANDOMIZER & PATCH the 4 buttons above the display act as function keys to execute different menu functions. A button acting as function key has it's LED shining and a command printed in capitals in the 1st line of the display.

Example: press RAND to enter RANDOMIZER. The LEDs of the buttons RAND and PEEK light up, line one of the display reads 'XIT DO' below the buttons. Pressing RAND again means 'execute XIT' and you will leave Randomizer again. Pressing PEEK (=“DO”) would have created a random/preset patch which would have been sent to the Matrix right away.

PLAY Mode

After powerup or if no other mode is selected you are directly in **PLAY MODE**. This is the main mode you will spend most time in: here you change the parameters of the Matrix with the knobs. Details to PLAY Mode follow in *Chapter 5. Play Mode*

Button 'PREFS'

Press **PREFS** to enter the Programmer's menu with it's preferences. Any changes you make here will automatically be saved on exiting. The settings are also preserved after powering the Programmer down of course. Holding the PREFS button for longer than 2 secs. activates **MIDI BYPASS MODE**. Details on all PREFS parameters and the MIDI BYPASS MODE will follow in *Chapter 8. PREFS and MIDI BYPASS MODE*

Button 'COMPARE'

Use **COMPARE** to switch between your *original* patch of the Matrix and your *edited* patch. As long as compare is active and you hear the original patch, the turn dials are locked.

Line 2 of the display shows 'Original Patch' to make clear you actually are listening to the original patch as it was coming out of the Matrix's memory. Line 1 displays the command 'KEEP?' and button No. 4's LED above the display is bright. If you desire to keep your original patch just press this function key. Your edited patch will be replaced by the original patch and the Programmer jumps back into PLAY mode. Or you simply press COMPARE again to revert to your edited patch.

Button 'CHORD'

This enables/disables **CHORD MEMORY**. Holding the button for 2 seconds jumps into the CHORD SETUP menu. All infos and details about this in *Chapter 10. Chord Memory*

Button 'MATRIX'

Press **MATRIX** to enter **MATRIX MODE**. This mode offers a comfortable and complete access to all parameters of the 10 slots of the modulations matrix. Press MOD again to leave this mode. Details about Matrix Mode in *Chapter 6. Matrix Mode*

Button 'RAND'

Press **RAND** to jump into the Programmer's **RANDOMIZER**. If you are addicted to chaos or know all the 800 presets of the M1000 by heart this might be your weapon. Press RAND again to get back to PLAY Mode. The Randomizer will be handles in detail in *Chapter 7. Randomizer*.

Button 'PEEK'

Press **PEEK** to toggle **PEEK** mode on and off. While PEEK is active any knob fiddling brings the parameter to display without changing the value or sending anything to the Matrix.

Hint: If you just need to PEEK one or two parameters and want to avoid clicking ON/OFF, ON/OFF, ON/OFF there is a shortcut: keep PEEK pressed. If you hold the PEEK button longer than ½ a second on activating, it will be immediately disabled again as soon as you lift it again. This saves half of the 'Clicks'. As long as PEEK is down you can peek as many parameters as you like of course.

Button 'PATCH'

This leads to the **PATCH**-Mode, the place to select patches on your Matrix. As soon as you select a program here, the Synth Programmer will cause the Matrix to call this program and request the related parameter values into the Programmer for both to be in sync. More on this in *Chapter 8. Patch Mode*

5. PLAY Mode

This is the Programmer's mode right after powerup. As long as the Programmer and the Matrix did not synchronize, the display reads „**Waiting for Program Change**“.

Synchronisation is quite easy:

- a) on your Matrix6 / 1000 simply select the patch you want to work with. If it's the currently selected, please select it again to sync with the Programmer.

Or

- b) press the Programmer's PATCH key. For Matrix 1000 the currently selected patch will be requested into the Programmer. For Matrix 6 the Programmer will first call Patch 0 (for technical reasons). You can dial in any other number then of course.

Programmer and Synthesizer are in sync now and we can start. On turning a dial you change the parameter inside the Matrix while the Programmer's display shows all the details. It provides 4 informations:

- to the upper left you see the parameter group (e.g. 'DCO1', 'VCFA', 'LFO1' usw.)
- right behind follows the parameter name (e.g. 'Frequency')
- lower left corner displays the original value of the parameter in brackets
- last one: lower right you find the current value changing as you move a pot. This value also can be finetuned with encoder 3.



Encoder 4

Encoder 4 offers two helpful features in PLAY mode:

- bipolar parameters (values ranging -63 up to +63) can be set quickly to 0. If you prefer getting back to the value before jumping to 0 ... just move encoder 4 one more tick in any direction - your old value will be resumed
- both frequencies for DCO1 & 2 can be stepped up or down in octaves. First tick: let the current value snap into the next octave. Consecutive ticks jump up or down in octaves until 0 or 60 is reached.

Turn dial 'Volume'

The knob upper right labeled VOLUME sends Control Change #7 (Midi Volume) for Matrix 1000. CC#7 will not be recognized by the Matrix6/6R though. That's why this dial controls VCA1 Amount if you set a Matrix 6 OS in the Programmer's Prefs.

There is of course a way to convince the Matrix 6 to react to Midi Volume:

- Parameter 27 VCA1 VOL to 0
- Parameter MIDI 08 LEVER 2 SELECT to 7 (for CC #7)
- Mod Matrix Source: LEVER 2, Target: VCA 1, AMOUNT +63

... but it would be cumbersome setting this on every patch just to control VOLUME on the Matrix 6.

Turn dial 'Detune/Prs'

The knob with the label 'Detune/Prs' also got different functions according to the OS Version you have set in Prefs. If your OS supports 'Unison Detune' (M1k 1.16 & 1.20) you directly can adjust Detune here. For all other OS versions this dial sends Pressure. Pressure perfectly can be used as source in the Modmatrix and will be made use of in many presets.

Parameter groups

A program of the Oberheim Matrix 1000/6/6R has 133 parameters. The Programmer just offers 45 turn dials. You ask yourself 'Where is the rest?' The rarely used parameters are grouped by function and spread on sub pages.

They will be selected and changed with the encoders. If a parameter group offers sub parameters, this will be indicated by printing the groupname in CAPITALS. The groups correspond to the grouping the Matrix already uses. Exception: RAMPS will be found in the LFO groups.

Following is the list of parameter groups, in brackets the parameters you will find there:

- DCO1 (*Levers, Portamento, Click*)
- DCO2 (*Levers, Portamento, Click*)
- PRTA (*Velocity, Mode, Legato*)
- LFO1 (*Speed<Pressure, Retrigger Point, Amp<Ramp1, Trigger Mode, Lag, Sample In, Ramp 1 Trig, Ramp 1 Rate*)
- LFO2 (*Speed<Keyboard, Retrigger Point, Amp<Ramp2, Trigger Mode, Lag, Sample In, Ramp 2, Trig, Ramp 2 Rate*)
- VCFA = "VCF/VCA" (*F<Prs, Levers, Key/Prt, Vca1 Vol, Vca1 Velo, Vca2<Env2*)
- FMTR = „FM & Tracking Generator“ (*FM<Env3, FM<Prs, Input, Points 1-5*)
- ENV1 (*Delay, Trigger Mode, Mode, LFO1 Trigger*)
- ENV2 (*Delay, Trigger Mode, Mode, LFO1 Trigger*)
- ENV3 (*Delay, Amp, Amp Velocity, Trigger Mode, Mode, LFO1 Trigger*)

If you turn any of the normal dials you will see the name of the corresponding parameter group in the upper left corner. E.g. you move 'DCO2 Detune', in the upper left of the display it says 'DCO2'. Moving the first or second encoder one tick causes the Programmer to jump to the 'hidden' parameters of the DCO2-group which are not directly layed out on dedicated knobs.

Being in the submenu, the 4 encoders got the following functions:

- Encoder 1 scrolls through all the groups (e.g. from DCO2 to PRTA to LFO1 etc.)
- Encoder 2 scrolls through the available parameter sof a group. The display always informs about the position: „3/5“ means you are in para 3 of a total of 5
- Encoder 3 – you know it already – changes value
- Encoder 4 does – nothing :-)

The moment you move any of the normal knobs the Programmer jumps out of the submenu. The last selected page of each group is memorized. If the last visited para in VCFA was page 4/6 'VCA 1 Volume', you will land there again if skipping between different groups or entering VCFA subgroup directly.



Hanging notes – Midi Panic

It might happen your Matrix suffers from a hanging note. It wont stop ringing although all keys are released. There is no need switching it off, simply switch *Chord Memory* on and off again. Entering CHORD MEMO sends an 'All Notes Off' command, the Matrix should be quiet again then.

6. MATRIX Mode

The Stereoping Programmer allows full and comfortable access to the modulation matrix. After pressing the MOD button, it's LED should light up and the display should show the following information:

- in the upper left you see the Modulation source, e.g. 'S:Lfo2'
- right below is the target, e.g. 'T:Dco2Freq'
- upper right holds the current number of the available 10 slot in format '3/9'. Following the convention of the Matrix 6 itself, they start with 0, not 1
- finally the amount in the lower right corner, e.g. '-07'

You can change all parameters directly with the 4 encoders. The lines on the faceplate should make clear which encoder changes what value. All changes will be sent to the Matrix immediately.

For the parameter 'Value' we implemented the feature for sending the mod matrix update to the Synth only after no more changes occur for ½ second. The benefit is not overwhelming the Matrix with e.g. 52 unnecessary tasks when changing AMOUNT from -10 to +43.



Direct selection of most targets through pots

Nearly all modulation targets can be selected directly while holding PATCH and shortly moving the corresponding dial like e.g. DCO1 Frequency or ENV3 Attack. That is why we printed the blue type 'Targets' above the PATCH button. Targets not selectable with pot are Levels for VCA1 and VCA2 as well as the Delay for all 3 envelopes.

Matrix 6/6R exception

As explained above the Matrix6/6R does not react to the simple parameter change commands in the mod matrix. Changes are only possible here by sending the whole patch logically leading to much more midi data to be sent. For not overwhelming the M6, the Programmer has a special feature: it sends the changes on the mod matrix only, after you did not change anything for about 1/2 a second. You can perfectly dial your changes as mad ... after releasing the encoders for ½ a second the Matrix 6 gets it's update. This works quite well for the Matrix as well as the user, in normal life you hardly will notice that delay.

Value Speedup per Poti

For speeding up your edits there are 2 pots with a special function. Both can be found to the left of the MATRIX button and got the blue labels 'Zero' and 'Value':

- using the pot 'Zero' allows setting the modulation amount instantly to 0
- the pot 'Value' can set amount between -63 and +63 quickly without having to use encoder 3

Temporarily deactivating Modulation slots

Another helpful feature:

Press 'Disable' (RAND button) in MATRIX MODE to temporarily deactivate the current modulation slot. The LED of RND starts to blink, press it again to resume the original state

Pressing 'all' (PEEK button) here deactivates all 10 slots at once. Press it again to revert.

The changes are only temporary in MODULATION mode. As soon as you get back to PLAY mode all slots are activated again.

7. RANDOMIZER

The Randomizer creates random patches as well as some typical preset sounds, to offer a clean starting point for your own creations. Its aim is not to spill patch junk, needing 25 attempts until coming up with something valuable. The Randomizer follows some special rules. E.g. envelope triggermodes for ENV2 will not be set to external trigger or DCO waveform will rarely be set to OFF. On the other side you hardly can expect 50 attempts to create 50 breathtaking top patches.

The 4 Buttons above the Display execute the following commands:

- **KEEP** - will appear below the MATRIX button after having created a random sound. If you like to keep it, press this button. A YES-NO safety requester is presented. After confirmung with YES, your old patch BEFORE entering Randomizer will be rejected and your random sound will become the current patch held in Programmer's memory.
- **'XIT'** - press this to exit Randomizer - without safety requester - and return to PLAY mode. If you created a random patch it will be rejected and the Patch before entering Randomizer will be restored.
- **'DO'** - creates a random patch based on the parameters explained below. All matrix modulations are set to OFF here.
- **'DO+M'** - creates a random patch, this time WITH modulation matrix randomization. In Mode 1 only Slot 0 is used. Mode 2 uses Slots 0-2, Mode 3 uses Slots 0-4 and Mode 4 finally takes ALL slots into account.



In the second display line you can take influence on fortune:

- encoder 2 selects the **Preset**: Init, Bass, Orgn, Perc or Pad.
- encoder 3 changes **'Mode'** between 0 and 4 to increase the amount of randomization. Mode 0 sends the preset without any randomization. If something different should happen on pressing 'DO' over and over again, 'Mode' should at least be 1.

Mode 0: Just the Randomizer's preset is sent to the Matrix. No randomization at all.

Mode 1: some randomization based on the selected preset, DCO1 & 2 in octaves, no Envelope Delay, ENV 1 & 2 times keep unchanged

Mode 2: even more random range, DCO1 in octaves, DCO2 in famous intervals, no Envelope Delay

Mode 3: large random range, DCO1&2 in famous intervals

Mode 4: full Chaos

Note: all the dials are still active in randomizer of course. If you wont hear any sound after creating a random patch it might be worthy tuning CUTOFF or VOL ENV AMOUNT before pressing DO again :-)

8. PATCH Mode

Note: On each patch change – no matter if engaged from Programmer's PATCH Mode described here, on the Matrix frontpanel itself, even on receiving Midi Program Change messages from the DAW – the Programmer syncs with the Matrix automatically. Means: you do not need this mode at all, it just offers a convenient way to jump to patches from the programmer itself.

This is the mode to select programs for your Matrix.

After selecting a patch you will see the pic to the right for the Matrix 6. On the Matrix1000 it looks a bit different as it shows bank and program numbers instead of patch names.

Using the keys PRV and NEXT you can scroll through the patches of your Matrix.



To skip to distant patch numbers you can as well use the encoders for tuning in the number of your choice. The display shows something like shown to the right.

Matrix 6:

- Encoder 2 changes the 10 digit
- Encoder 3 increase/decreases in single steps

Matrix 1000:

- Encoder 1 changes the bank number
- Encoder 2 changes the 10 digit
- Encoder 3 changes the 1 digit

Press 'YES' to load the patch.

Or use 'XIT' to leave Patch Mode.



9. PREFS und MIDI BYPASS MODE

PREFS menu offers 7 pages. The currently selected will be displayed in the upper left corner in format '2/7' e.g. You can swap pages with encoder 1 and 4. Values can be changed with encoder 2 and 3.

The pages:

- **'1/7 Midichannel'** – this is where to set the Programmer's midichannel. It should fit the current midichannel of your Matrix. Parameter tweaks will work even if channels differ. Some features (Midi Volume, Unison Detune, ...) demand having identical channels though.
- **'2/7 Synth'** – tune in your Synth and the OS version it runs. Matrix 1000 and Matrix 6/6R are approached differently, also for patch selection e.g. You do not know the OS version of your synth?
 - Matrix 1000 shortly displays it's OS version directly on powerup
 - Matrix 6 got a dedicated parameter: MASTER EDIT 54 – SOFTWARE VERSION.
- **'3/7 Flt ProgChng'** – choosing YES filters/blocks all program changes coming in from DAW/Sequencer connected to **MIDI 2 IN**. When set to NO they will be forwarded to the Matrix engaging an automatic patch request from the programmer instantly afterwards.
Caution: unsaved edited patches can be lost by some unintendedly engaged program change from inside your DAW or keyboard.
- **'4/7 Flt SysEx'** – selecting YES blocks all SysEx-messages coming in on **MIDI 2 IN**. This might relieve Midibus data capacity and improve performance. If you want to dump some patches into the Matrix from your DAW this should be set to NO of course.
- **'5/7 Flt Realtime'** – selecting YES blocks all Realtime-messages coming in on **MIDI 2 IN**. This might relieve Midibus data capacity and improve performance. Realtime messages are timing information like START, STOP o CLOCK. The Matrix does not make use of them anyway, you can leave this to YES.
- **'6/7 Flt OtherChan'** – when set to YES only Midi data will be forwarded to the Matrix coming in on the midichannel set on PREFS page 1/6. This might relieve Midibus data capacity and improve performance. If you plan to use your Matrix 1000 in Guitar Mode you should set this to NO. The mididata on all 16 channels will be passed through to the Matrix then.
- **'7/7 Displaysaver'** – YES means the display falls asleep after 23 Minuten inactivity. This can increase lifetime of OLED displays. As soon as you move a knob or some mididata is detected on the programmers Midi In the display wakes up.

You can leave this mode by pressing the PREFS button again. If you changed any of the values, your new settings are saved automatically.

Midi Bypass Mode

The PREFS button got a secondary function. By holding it for 2 seconds the Programmer jumps into **MIDI BYPASS MODE**. Being in MIDI BYPASS MODE most of the routines of the Programmer are skipped and any midi data coming in on **MIDI IN 2** will be forwarded unprocessed and unfiltered to your Synthesizer on **MIDI OUT 1** - as if your Programmer would not be in between at all. This mode is quite useful if you want to dump some soundbanks into the Matrix. You can leave MIDI BYPASS MODE at any time pressing PREFS again.

10. CHORD MEMORY

The CHORD Button simply switches CHORD MEMORY on and off. A Chord Memory allows to play a previously learnt chord chromatically by just pressing one key. The lowest note of the chord is the base note, all remaining notes will be shifted in their learnt interval above the base note.

The Chord Memory of the Synth Programmers offers six 'Chord Slots' which can be quickly changed by pressing notes on the keyboard. Your 6 chords keep saved in Programmer's memory even after switching it off.

Triggernotes

The 6 chord memos will be selected each by it's own keyboard note, the triggernote. It allows switching chords over midi to be automated easily in a song. The triggernotes are also used in Chord Setup to learn the chord. You can program and use the chord memory completely from the keyboard without switching between Programmer and keyboard.

To avoid collision of triggernotes and normal play notes, setup also offers changing the position of the triggernotes. But they always are placed on succeeding keys, e.g. C2, C#2, D2, D#2 etc.

On activating or changing chord slots, the display shortly shows the currently selected Chord Slot and the triggernote, e.g. „Sl: 2 Nt:2 Tr:C “ (Slot 2, using 2 notes in total, triggernote C1)

Chord Setup

To enter CHORD SETUP keep the CHORD key pressed for 2 seconds. This is the mode to learn new chords, set Strum or shift the triggernotes.

The display shows the following:

Sl:2 – You are currently working on slot 2. Change the slot with encoder 1 or using the triggernotes

Nt:3 – The current chord slot uses 3 notes. This will be updated automatically on learning a chord

Tr:C3# – The triggernote for this slot is C3#. Shift all triggernotes using encoder 4. Remember: the triggernotes for all 6 slots are succeeding. Changes on one slot alters all others as well.

Strm:00 – the Strum-time is a short delay before triggering the next note of the current chord. Possible values range from 0 to 99. Change strum time using encoder 2.

Mode:Tgl/Hld – The Chord learn mode, use encoder 3 to toggle between 'Toggle' and 'Hold'.

Being in Chord-Setup you can play your chords and swap slots as outside the Setup. **The big difference in Setup: while holding a triggernote you learn the new chord.** Display shows 'LEARN!' instead of the triggernote. The first incoming note will erase the old chord in memory. As soon as you do not SAVE on exit, nothing is lost.

Learning modes 'Toggle' and 'Hold'

In learning mode 'Hold' you just hold your chord until you lift the triggernote. In 'Toggle' mode you do not need to hold the desired keys, making things easier on chords with widely spread notes. Press a note to add it to the chord. Press it again to remove it.

Lifting the triggernote saves your new chord in the current slot and you can start testing your chord on the keyboard.

You can leave Chord-Setup by pressing CHORD again. On leaving you will be asked whether to save or reject your changes. The buttons above the display offer 3 options:

- SAVE – all changes in the chord slots will be saved
- BACK – leads back into the Chord Setup
- XIT – Chord Setup will be left without making any changes



11. CC to SysEx translator

Maybe you like to automate cutoff, envelope times or other parameters in your song? This is where the CC-translator comes into play, it converts ordinary Midi Control Change messages into the complex SysEx-Strings your Synthesizer needs to see for parameter changes.

Setup a 'mixermap' or 'Dashboard' (or whatever it is called) in your DAW with sliders or turn dials sending Midi-Controller-Change messages (CC). You just need to assign the CC number associated to your desired parameter to such a control (according to the table). By moving or automating this control inside your DAW or sequencer the Programmer translates the DAW's CC-output into SysEx-commands and sends them to the Matrix which immediately changes it's sound.

To avoid intersections with Standard-CCs like Volume (#7) or panning (#10) some CC-numbers are left out. The CC data must be sent on the same midichannel as your Programmer and Matrix is set to.

Notes: according to the Synthesizer's OS version and kind of automated parameter the realtome modulation works better or worse.

Due to technical reasons the Programmer does not show permanent value changes when translating CC into SysEx data.

CC#	Parameter
14	DCO1 Freq
15	DCO1 Shape
16	DCO1 Pulse
17	DCO1 Wave
18	DCO 1 FREQ by LFO 1
19	DCO 1 PW by LFO 2
20	DCO 2 Freq
21	DCO2 Detune
22	DCO2 Shape
23	DCO2 Pulse
24	DCO2 Wave
25	DCO 2 FREQ by LFO 1
26	DCO 2 PW by LFO 1
27	Mix
28	Cutoff
29	Cutoff by Env1
30	Cutoff by Pressure
31	Reso
32	VCA1 Vol
33	FM Amnt
34	Env1 Delay
35	Env1 Attack
36	Env1 Decay
37	Env1 Sustain
38	Env1 Release
39	Env1 Amplitude
40	Env1 Velocity
41	Env2 Delay
42	Env2 Attack
43	Env2 Decay
44	Env2 Sustain
45	Env2 Release
46	Env2 Amplitude
47	Env2 Velocity
48	Env3 Delay
49	Env3 Attack
50	Env3 Decay
51	Env3 Sustain
52	Env3 Release
53	Env3 Amplitude
54	Env3 Velocity
55	Lfo1 Speed
56	Lfo1 Wave
57	Lfo1 Amp
58	Lfo2 Speed
59	Lfo2 Wave
60	Lfo2 Amp
61	Ramp 1 Rate
62	Ramp 2 Rate

12. Updating Firmware

The day may come you want to update your edition or try out another. Your Synth Programmer offers a firmware update mode for this. After entering this mode you just send a firmware-file into the controllers MIDI IN 2 jack. The firmwares in SysEx-format are all compatible with your Programmer and freely available on our website. You can dump them with any standard SysEx dump tool of which several are available as freeware for different operating systems. An example for PC is 'MidiOX', for the Mac you could use 'SysEx Librarian'.

The technical part:

- Switch off the Stereoping Programmer
- Connect **MIDI OUT** of your Midi-Interface directly to the jack **MIDI 2 IN** of the Programmer using a short cable of good quality
- There are some preferences in most SysEx-Dump Programs like 'Delay between Buffers' or 'Delay after F7'. Please choose something around 100mS (Milliseconds) here.
- Hold MATRIX and power up your Programmer. The Display should read 'BOOTLOADER'
- Load the new Firmware into your SysEx-Dump Program and send it out
- The display shows OS-Version and progress. After about 2 minutes the Programmer restarts
- If you will get an error on the screen please try another cable or increase the delay mentioned above.

The firmware update erases all PREFS settings.

All 6 Chord Memory slots will be reset to factory settings.

13. Matrix 1000 hints

Some orderless hints to get more out of your Matrix 1000.

- If the Matrix does not make sound although the blinking of the last displaypoint indicates incoming notes, please check the following:
 - Volume knob on the Matrix itself is set to 0? ... we're pretty sure you already knew this 'hint' :-)
 - ENV2 AMP and VELO both set to 0? ENV2 is modulating VCA2.
 - VCA1 AMP and VELO both set to 0?
 - DCO Waveforms of DCO 1 & 2 OFF?
- To save a patch on one of the RAM slots between 000 and 199: hold ENTER while typing 3 numbers
- If one day your Matrix1000's voices do not sound the same anymore, are out of tune or completely missing ... dont panic. First try the calibration routine:
 - press SELECT until 'Ext. Func.' LED lights up
 - press '7', then ENTER. The display shows '0'. Press ENTER again
 - The display shows 'Cal' for 10-30 seconds

14. Init Patch

Patch Name : 'SP INIT'

Keyboard mode	Reassign
DCO1 Freq	0
DCO1 Waveshape	31
DCO1 Pulse	31
DCO1 Fixed Modulations	Lever
DCO1 Waveform	Both
DCO2 Freq	0
DCO2 Waveshape	0/Sawtooth
DCO2 Pulse	24
DCO2 Fixed Modulations	Lever
DCO2 Waveform	Pulse
DCO2 Detune	2
Mix	31
DCO1 Porta	Off
DCO1 click	Off
DCO2 porta	Keytrack
DCO2 click	Off
DCO sync	Off
VCF Cutoff	127
VCF Reso	0
VCF fixed mod	Off
VCF Porta	Off
VCF FM	0
VCA1 init amount	63
Porta rate	0
Lag mode	0
Legato Porta enable	0
LFO1 speed	40
LFO2 init Speed	30
LFO1&2 trigger	0
LFO1&2 lag enable	0
LFO1&2 wave	0
LFO1&2 retrigger pnt	0
LFO1&2 Sampled Source	0
LFO1&2 Ampl	0
ENV1 trigger mode	Multi Trigger
ENV2 trigger mode	Single Trigger
ENV1&2&3 Delay	0
ENV1&2&3 Attack	0
ENV1&2 Decay	10
ENV1&2 Sustain	50
ENV1&2 Release	10
ENV1&2&3 Amplitude	40
ENV1&2&3 LFO trig mode	Off
ENV1&2&3 Mode	DADSR
ENV3 trigger mode	Multi Trigger
ENV3 Decay	20
ENV3 Sustain	0
ENV3 Release	20
Track Gen input	Env 1
Track Gen Points 1-5	0,15,31,47,63
Ramp1&2 rate	0
Ramp1&2 Mode	Single Trigger
DCO1&2 F<LFO1	0
DCO1&2 PW<LFO2	0
VCF F<ENV1	42
VCF F<Pressure	0
VCA1<Velo	0
VCA2<ENV2	63
Env1&3 Amp<Velo	0
Env2 Amp<Velo	63
LFO1/2 Amp<Ramp1/2	63
Porta rate<Velo	0
VCF FM<ENV3	0
VCF FM<Pressure	0
LFO1/2 Speed<Pressure/Keyboard	0
Modulation Matrix	All 0

15. Imprint

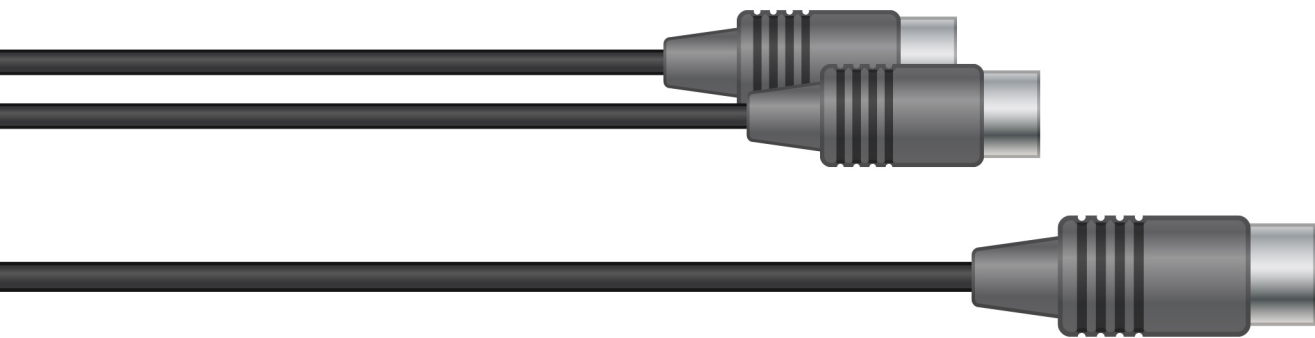
Stereoping is a registered trademark of Gregor Zoll, Germany.

Adresse Gregor Zoll Musikelektronik
 Hermann-Voss-Str. 21
 59872 Meschede
 Germany

E-Mail hello@stereoping.com

Homepage <http://www.stereoping.com>

STEREOPING



SYNTH PROGRAMMER // //

