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General features of the Synth Programmer

The Stereoping Synth Programmer offers 45 control dials, 4 endless encoders and a 16x2 characters OLED display for convenient and intuitive sound shaping of your Rhodes Chroma. At the moment you turn a knob, the Programmer sends the suitable command to the Chroma which immediately changes sound.

- Highly specialized hardware midicontroller for Rhodes Chroma with CC+ midi interface (min. OS V215)
- Optional CC-mode to send customizable Control Change commands (VSTi remoting)
- 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
- Graphical design suitable to Rhodes Chroma

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 noone really can guarantee how long it will keep it's perfect function when displaying the same content for hours or even days, we integrated a little 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 off the OLED display – the LEDs of 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

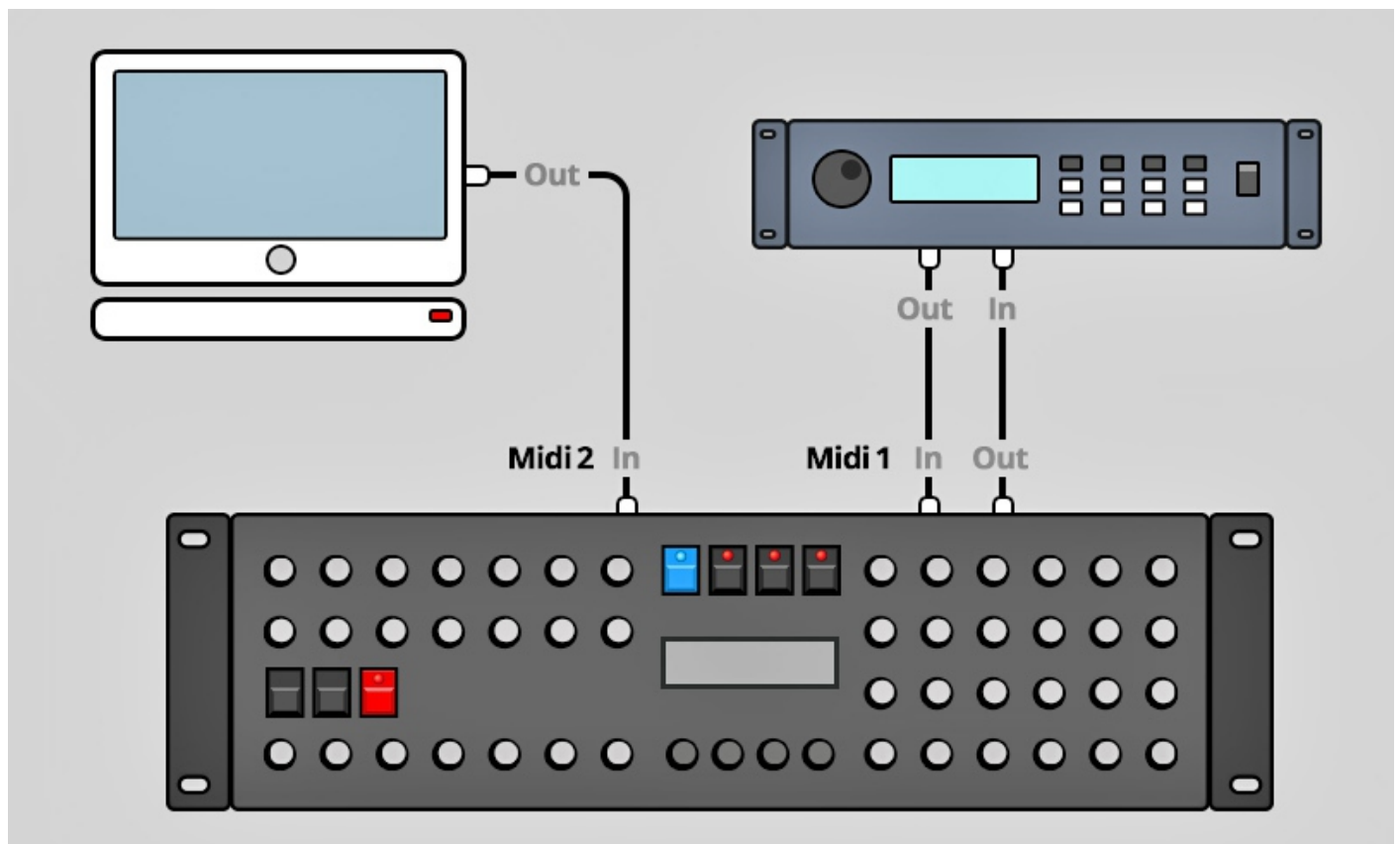
You can use any ordinary 9 Volt DC powersupply to operate your controller. The connector should have **Plus on its center pin** and Ground - sometime labeled as 'Minus' - on the outside. The Synth Programmer has a protection diode for not taking damage if the polarity of the power supply is wrong, it 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 Chroma
- **MIDI 1 - IN** -> MIDI OUT of the Chroma
- **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 Chroma. 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 a.s.o. 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. Settings and workflow

Settings on the Rhodes Chroma

The Programmer is designed to work in conjunction with the Chroma's CC+ Interface (at least Version 215) in its default settings regarding the Midi Controller Map (MCM - Association of Parameters to Midi Control Change Numbers). To set the interface to its default settings:

- Press 'SET SPLIT' and program button 36 to enter the interface's 'Programming Mode'
- Press button 20 for parameter 'P20 Init MCM'
- Move the PARAMETER CONTROL Slider something to confirm
- Leave Programming Mode by pressing SET SPLIT & 36

In addition, the following settings of the interface have to be set. They can be accessed as described above by pressing SET SPLIT and program button 36:

- P1 Base Channel – should match the midichannel set in the Programmer's PREFs.
- P2 Mode – should be set to PLAY
- P4 Program Changes – should be ON, otherwise the Programmer does not get the signal for synchronisation of program data.
- P6 Parameter Changes – should be ON, otherwise the Chroma would not react to the parameter changes sent by the Programmer.
- P18 'MCM Mode Selection' - should be set to 'Cust'. This means the Chroma's Midi interface uses the Expanded Mode to allow accessing all A/B parameters.
- P24 'Select MIDI Continuous Controller Mode' – should be set to 'Prog', otherwise the sound parameter changes coming from the Programmer are only sent to the 'Instrument' and the program keeps untouched – as a result changes would be gone after storing the program.

Synchronisation

After powerup the Programmer's memory is empty, it should be filled with the parameter values of the Chroma's currently selected program. As long as Programmer and Chroma are not synced yet, Compare remains locked. In addition the Programmer will show only questionmarks where you might expect the display to show original parameter values.

There are two ways for synchronisation:

- just select a patch on the Chroma itself. The Programmer automatically requests the parameter data of this program.
- Use the Programmer's PATCH Mode – more on this in *Chapter 4. PATCH Mode*

Editing values directly on the Chroma

Even when connected to the Programmer it's perfectly ok make edits on the Chroma itself. The Programmer registers the changes you make on the Chroma's interface and shows them on its display. The Programmer's LEDs for EDIT A & B are related to the dials on the Programmer and are independent from incoming parameter changes and their updates on the display. So it might be possible your Programmer is set to EDIT A and you make changes on the Chroma itself set to EDIT B. The changes displayed on the Programmer's OLED are always related to the currently active channel on the Chroma, not the Programmer's A/B buttons.

Saving Programs

Saving Programs is only possible on the Chroma itself, the Programmer does not offer any possibility to save Programs or cause the Synth to do so.

Features of the CC+ Interface

The Programmer does not offer any Randomizer nor an Initialising program. Both is already built in the CC+ Interface:

- SET SPLIT & 38 for entering the Randomizer
- SET SPLIT & 39 for an initialising program ('SCRATCH PATCH')

3. Brief overview

Let's take a quick look on the user interace.

Concept of colors and design of the faceplate

The distribution of blue and green colors for parameter fields does NOT match the colors on the Chroma. While the Chroma switches between green and blue each 5 parameters (for whatever reason), the Programmer groups related parameters by using a color throughout the whole group: all SWEEP parameters are blue e.g., all ENV2 parameters are green a.s.o.

The group PITCH runs over two parameter rows, CUTOFF even uses 3 rows. This unfortunately could not be avoided, the reason lies within the concept of the programmer, which is also used for other target synthesizers. The orange brackets above the parameter fields as well as the group color show you which parameter belongs to which group. We considered it much more important to keep the increasing parameter numbers in order. As on the Chroma itself the first parameter is to the upper left, number 50 to the bottom right.

Dials with double function

The Program of the RHODES CHROMA got 50 parameters but the Programmer only offers 45 Pots – some parameters have to share one dial logically. They can be spotted easily as they have 2 white numbers in their colored field. More about these double parameter dials in the *chapter 5. PLAY Mode*.

PLAY Mode

Directly after powerup or if no other mode is selected you are in **PLAY MODE**. This is where you will spend the most time, changing the values of your current program with the dials. All information about this mode is described in detail in *chapter 5. PLAY Mode*.

Pots, encoders and buttons

Use the 45 turn dials to instantly change the parameters of your Chroma program. Dependent of the state of the buttons „EDIT A“ and „EDIT B“ your changes will be sent to Channel A or B or both.

The 4 endless encoders below the display have different tasks, related to the currently selected mode. In PLAY Mode Encoder 1 (labeled 'Switch Para') allows switching between the 2 parameters assigned to double para knobs. Encoder 4 (labeled 'Value') can be used to finetune the current parameter value. In PATCH Mode encoder2 allows selecting the desired bank while encoder 3 sets the PROGRAM number.

All buttons except PREFS and PATCH are used in PLAY mode only and will be handled in the chapter for PLAY Mode.

Button 'PREFS'

Press **PREFS** to enter the Programmer`s preferences. Any changes you make will be saved automatically when leaving PREFS. Your settings will be resumed on next powerup of course. By holding PREFS for 2 seconds you activate the **MIDI BYPASS MODE**. Details to all PREFS and the MIDI BYPASS MODE will be handled in *chapter 6. PREFS and MIDI BYPASS MODE*

Button 'PATCH'

Press **PATCH** to jump into PATCH Mode. This is where to recall Programs you want to work on. Details about PATCH Mode will be handled in *chapter 4. PATCH Mode*

4. PATCH Mode

As we already learned, the memory of the Programmer is empty after powerup. We need to sync Chroma and Programmer first before seeing the original values of the actual Chroma program. There are two ways to do that:

Sync-possibility 1: selecting a program on the Chroma itself

Select any program directly on the Chroma. The Programmer will receive a Program-Change command from the Chroma and automatically fetches all the parameter values of the new program. That's it. If you prefer this method you will not need the PATCH mode at all.

One issue about bank numbers: The CC+ interface remembers the selected bank even after being switched off, it will be selected again after the next powerup. Your Programmer unfortunately has no idea about the currently selected Chroma bank. As long as you do not switch the bank on the Chroma, the Programmer does not know about the current bank.

Sync-possibility 2: choosing a Program in PATCH Mode

Press the Patch button to enter Patch mode. You can remotely select Chroma Programs from the Programmer. This might be helpful if you use a Chroma Expander sitting some meters away from your Programmer.

The CC+ Interface offers 4 banks of 50 Programs. This feature is supported by the Programmer as well of course. The picture shows the typical Screen in PATCH Mode. In the upper left corner of the display you see the bank and program number of the program currently held in the Programmer's memory . If you see underscores instead of numbers: after powerup, the Programmer's bank and program numbers are not defined yet and displayed as underscores.

Use encoder 2 to select bank 1-4, encoder 3 changes the Program number between 1 and 50. Press the button labeled **YES** and the Programmer causes the Chroma to recall the desired Program and automatically syncs itself to the Chroma.



The button labeled **CUR** (for 'Current Program') asks the Chroma to send all current parameter values in it's memory to the Programmer. This might be helpful in a situation when you worked some time on the Chroma itself and you suddenly remember, you got a Programmer for this. Switch the Programmer on, jump into PATCH mode and press CUR – the Programmer has the same Program data in memory as the Chroma then.

After successful recalling and syncing you'll see something like the picture to the right. You can press **PRV** (=previous) or **NXT** (=next) to switch through the Programs of the current bank or use the encoders as described above for larger jumps or bank changes.

Pressing the button labeled **XIT** leaves Patch mode and heads back to normal PLAY mode.



5. PLAY Mode

This mode is active directly after powerup.

In dependence which dial you turn, the display shows different information.

Usually:

- the first line shows the parametergroup (e.g. 'PIT' for PITCH), parameter name and the new value.
- Line two displays the original values (of the edited program) for Channel A and B. For CONTROL parameters it display only the original value as there is no A/B distinction.

If CONTROL – PATCH is set to 0 (16 Channels) the 'B' is printed as small letter to indicate, changes on channel B do not change the sound.

The string values of the second line are shortened as they need to be displayed for A and B. Example: for parameter 8 SWEEP MODE, the valuestring 'AsyncFreeRun' will become 'AsFre' in line 2. If there is no data in the Programmer's memory you will see questionmarks instead of string values.



General display exceptions

For some dials there are exceptions for technical reasons:

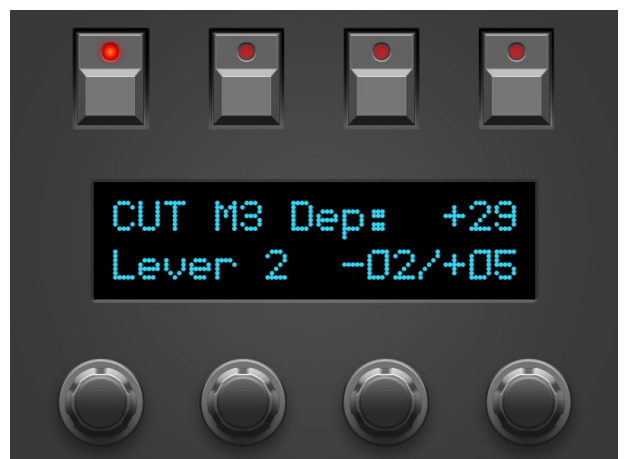
- CONTROL parameters do not display their group name CONTROL
- CONTROL 1,2,3,5: not showing their group or parameter name
- GLIDE 7: not showing it's group name
- SWEEP Parameter: not showing it's group name
- SWEEP 8: not showing it's parameter name
- PIT 26: to make it easier setting the full octaves the Tune-dial got some software dents

Display exception for MOD DEPTH

The parameter MOD DEPTH sets – yes – the modulation depth of a source between -63 and +64. Each DEPTH knob got a dedicated SELECT knob where to select the source. When changing a modulation depth, the Programmer conveniently shows the associated source in the second line. The original values for A and B will be displays in the lower right corner.

The example to the right shows 'Lever2' as modulation source which modulates CUTOFF by +29. The original values are -02 for Channel A and +05 for Channel B.

Note: for channel A and B could be set different sources of course. Always keep an eye on the state of the EDIT A/B buttons. If A and B are selected, only the source of channel A will be shown, even if channel B got set another modulation source.



Dials with double function

As stated above some dials share two parameters; the parameter which is active by default is set in brackets:

- 4 CONTROL Detune / 5 CONTROL Output (default: 4)
- 6 GLIDE Rate / 7 GLIDE Shape (default: 6)
- 8 SWEEP Mode / 9 SWEEP Rate (default: 9)
- 37 CUTOFF Mode / 38 CUTOFF Reso (default: 38)

You can switch the function of the dial with encoder 1 labeled 'Para Select'.

Example: move the knob with the numbers 6/7. The display e.g. shows '6 GLD Rate: 15'. Now move encoder 1 for one tick to the left or right, the display now should say something like '7 Shape:Gliss'. From now on the knob changes value for parameter 7. To go back to GLIDE Rate just do the same once more: move encoder 1 for 1 tick.

Hint: use the (temporary) PEEK Mode to select the double function knobs without changing the value.

Button 'COMP'

Press **COMP** (for 'Compare') to switch between the original Program and your edited version. As long as Compare is active, the knobs are locked.

Line 2 of the display says 'original Patch' to make clear you are listening to the *original Patch* from the Chromas Program memory. The first says 'KEEP?' below the 4th button which also got it's LED bright. If you desire to keep the original Program (which you can play/hear at the moment) you need to press this button. Your edited Program will be replaced by the original Patch and the Programmer falls back to PLAY mode. Other possibility: press COMP again and continue working on your edited Program.



After powerup the Programmer's memory is empty – there is nothing to be compared. That's the reason why this compare function remains locked until the first Program is synced between Chroma and Programmer.

Button 'PEEK'

Press **PEEK** to activate/deactivate the PEEK mode. While PEEK is active, the display only shows the current value if you move the knobs, no values will be changed. This is quite handy if you want to analyze a Program without making changes to it.

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.

Buttons 'EDIT A' and 'EDIT B'

The function of these buttons corresponds to the function of the buttons on the Chroma with the same name. Depending on which one is active, the changes will be sent to channel A or channel B. Of course you can select both to send the changes to both channels at the same time.

Button 'Relative'

This button only responds if Edit A and Edit B are both active, it switches 'Relative' mode On or Off. In Relative mode changing certain parameters (mostly time and tuning) will not set the parameter to identical values for channel A and B – they will be shifted remaining their value difference. Tuning intervals e.g. will be kept for Channel 1 and 2. This can be very helpful for SWEEP Rates, Envelope times or Tune for PITCH or CUTOFF.

The total value spread of the knob is in most cases smaller of course – the shifting of values ends as soon as the larger value reaches the upper or the smaller one the lower limit. In relative mode the supported parameters show both values in display (e.g. '24/36') instead of only one.



As already mentioned, the Relative mode only makes sense if Edit A and B are both on. 'Relative' will be deactivated as soon as only one of the Edit buttons is active. At the moment you activate both channels again, the lastly selected state (on or off) for Relative will be resumed again.

Example 1: GLIDE Rate A is set to 12, B has 18. The 'distance' between both is 6. Turning the knob for GLIDE Rate fully to the left results in A to become 0 and B to become 6. Fully clockwise will result in A: 25 and B:31 as 31 is the max. value for 'GLIDE Rate'.

Example 2: PITCH Tune has 12 for A and 24 for B – B is tuned one octave above A. Turn the knob until the display shows '24/36'. You just tuned the Chroma one octave up keeping the interval of both channels.

The following parameters will respond to Relative mode:

- 6 GLIDE Rate
- 9 SWEEP Rate
- 14 ENV 1 Attack
- 16 ENV 1 Decay
- 18 ENV 1 Release
- 19 ENV 2 Delay
- 21 ENV 2 Attack
- 23 ENV 2 Decay
- 25 ENV 2 Release
- 26 PITCH Tune-Regler
- 34 WAVESHAPE Width
- 38 CUTOFF Reso
- 39 CUTOFF Tune

All other parameters behave as if Relative is off: turning the knob sets A and B to the same value.

6. PREFS and MIDI BYPASS MODE

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

The pages:

- **'1/4 Midichannel'** – this is where to set the Programmer's midichannel. It should match the channel of your CC+ Interface.
- **'2/4 XtCC Display'** – means 'External CC Display'. This lets you decide if the Programmer's display should show incoming CC-messages. Making parameter edits on the Chroma itself lets the Chroma send such CC-messages to the Programmer which immediately shows the changes on its display. This can be very handy because the Programmer decodes numeric values in clear strings. When using a lot of modulation curves in a DAW automating the Chroma it might be disturbing having lots of display messages. You can deactivate the display of incoming CC messages then with this parameter.
- **'3/4 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 programmer's Midi In the display wakes up.
- **'4/4 Operate'**

'Operate' determines the main operation mode of the whole Programmer. Changing from one mode to the other lets the Programmer reboot after leaving the PREFS.

- Native: this is the main operation mode to edit all the Chroma's parameters as described in this manual
- CC-Mode: this mode turns your Programmer into a universal Midicontroller for the so called „Midi Control Change“ commands (CC). Sending standard CC messages is quite handy for remoting VST plugins or hardware responding to CC. The CC-mode had a dedicated manual on its own. You will find it on our website in the DOWNLOADS area of the Synth Programmer.

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.

7. 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 see the message „Wrong file“ after starting to dump the new firmware and you are sure you got the right file please try it again. Sometimes the one of other byte was still stuck in the midi data pipeline and causes the error.
- If you will get another error on the screen please try another cable or increase the delay mentioned above.

The firmware update erases all PREFS settings.

8. Imprint

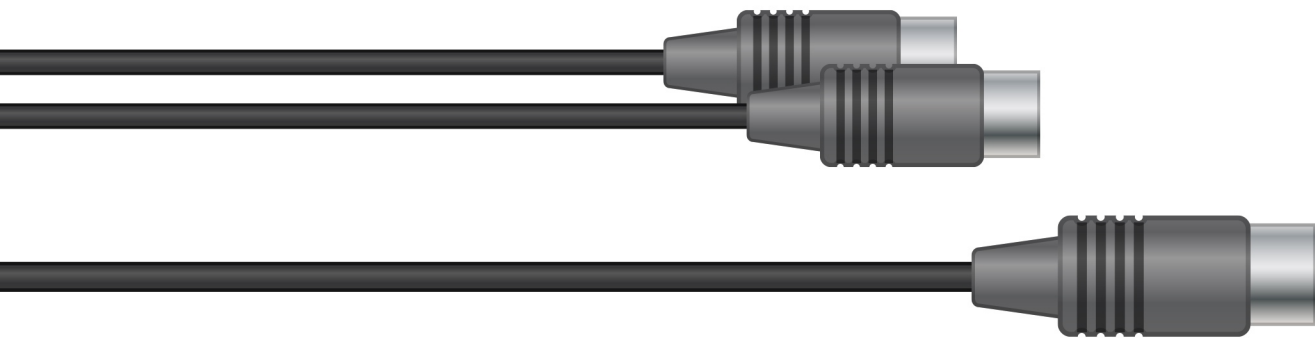
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Address Gregor Zoll Musikelektronik
 Hermann-Voss-Str. 21
 59872 Meschede
 Germany

E-Mail hello@stereoping.com

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

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