# KOMPLEX ELEKTRONIK

Dear KOMA Elektronik user, thank you for purchasing our Komplex Sequencer!

Some machines start with crazy ideas on paper but make much more sense when they are realized.

The Komplex Sequencer is one of those machines: four sequencers that can cross modulate each other and the possibility to control all features over CV—why not?

Here at KOMA, we love sequencers. It has been a key tool for many musicians throughout the years, ranging from techno producers to experimental ambient artists, all using its repetitive character to create innovative music. Now, it's time for the ultimate sequencer, one that has so much power and connectivity, giving you the possibility to transcend the sequence from a repeating pattern into an ever evolving cadence of sound.

The Komplex Sequencer stays true to KOMA's philosophy to interact with your gear like you would with an instrument; all features have their own dedicated controls, inputs and outputs on a large 87-point front-panel patch bay inviting you to instantly engage with the machine. By patching both internal and external CV sources between the four individual sequencers and the CV recorder, you can "sequence the sequence" and create extremely complex patterns that go beyond usual repetitious loops.

No matter if you have a small modular system or a studio filled with vintage synths, the Komplex Sequencer is compatible with almost all synthesizers that accept CV/Gate or MIDI. Open up a whole new world of playability and creativity, starting where all other sequencers stop.

Now, hook up your new sequencer and hit play!

**All the best from Berlin,**
**The KOMA Elektronik Team**

# TECHNICAL SPECIFICATIONS

### POWER REQUIREMENTS
9V/2A DC center-negative.
Only use the KOMA adapter shipped with the unit.

### SHIPPING WEIGHT
4.5 kg. / 9.9 lbs including power adapter and instruction manual.

### DIMENSIONS
46.2 cm x 29 cm x 4 cm (L x W x H)
18.2" x 11.4" x 1.6" (L x W x H)

### NET. WEIGHT
3.2 Kg / 8.8 lb

t looks like you're trying to make a sequence. Would you like me to annoy the fuck out of you?

☐ Get help with making the sequence
■ Get outta here, Clippy!
☐ Rerun Letter Wizard

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# GETTING STARTED

### 1. UNPACK
The package contains the Komplex Sequencer itself, a dust cover, this manual and the power adapter.

### 2. POWER
Use only the included 9V/2A DC center-negative power supply included. The sequencer turns on automatically when it receives power.

### 3. CONNECT
Plug the CV OUT of the Komplex to a CV Input (like V/oct, pitch or FM) of your synthesizer and the GATE OUT to the GATE or TRIGGER IN. Connect an external clock to the CLOCK IN of the Komplex if you are using another device as the master clock.

### 4. PLAY
Press PLAY and start moving the sliders and adjusting other parameters to begin creating a sequence.

### 5. PROGRESS
Make it more complex by patching and chaining the other sequences into one another! Remember to connect the CLOCK OUT of the running sequence into the others' CLOCK IN so they are in time with each other.

# USER SETTINGS

### SAVE SETTINGS    STEP + MODE
To save all current sequencer settings (except for the knob positions of course, we're not magicians) press and hold the STEP button and then press the MODE button. A cool knight-rider like light sequence confirms your saving action. While a sequence is playing, the saving process might throw off the timing.

### LED COLOR CHANGE MENU    STEP + GLIDE + SSP + GATE    (Press during start-up)
Use knobs D, E, F to change colors of the 3 Section Control groups  and knob G to adjust brightness. Save the settings by pressing the One-Shot Mode button of sequencer A. Wait for the LED to stop flashing before restarting.

### SHOW SEQUENCER FIRMWARE VERSION    STEP + GATE
To show the firmware version of any sequencer, press and hold the STEP button and then press the GATE button.

### SHOW MIDI FIRMWARE VERSION    STEP + GLIDE
To show the firmware version of your MIDI chip, press and hold the STEP button and then press the GLIDE button.

### FACTORY RESET    REP + MODE    (Press during start-up)
Press these two buttons to factory reset the Komplex.
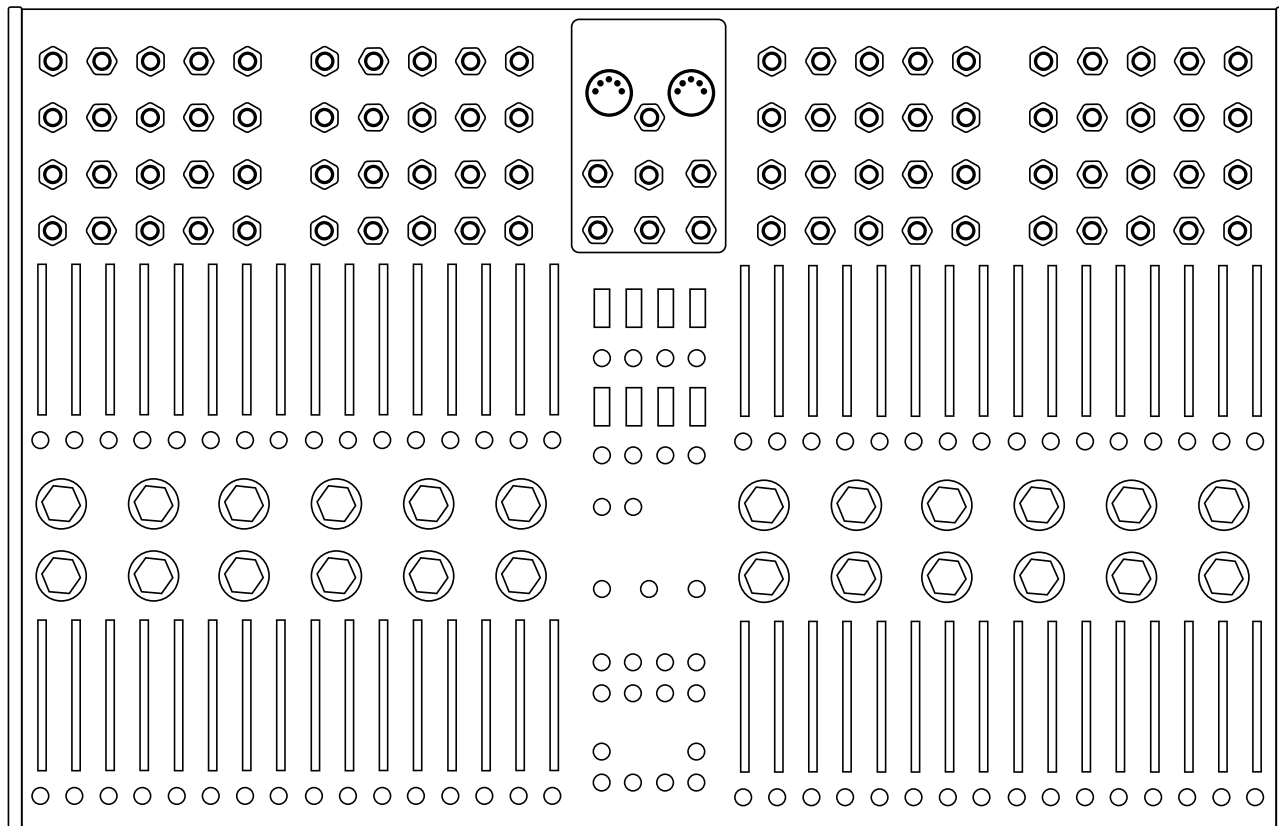
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# ADVANCED TECHNIQUES

**LEVEL METER:** When you press SSP section control button and set the SSP of a sequencer to step 1, you can use its SSP CV input as a 0 - 5V level meter.

**1-STEP SEQUENCE:** When you shorten the sequence length of a sequencer to only 1 step and hit play on that sequencer, that step will continously play and you can precisely set a CV level, gate length or any other control. Then change the SSP to select a different step and adjust its levels perfectly.
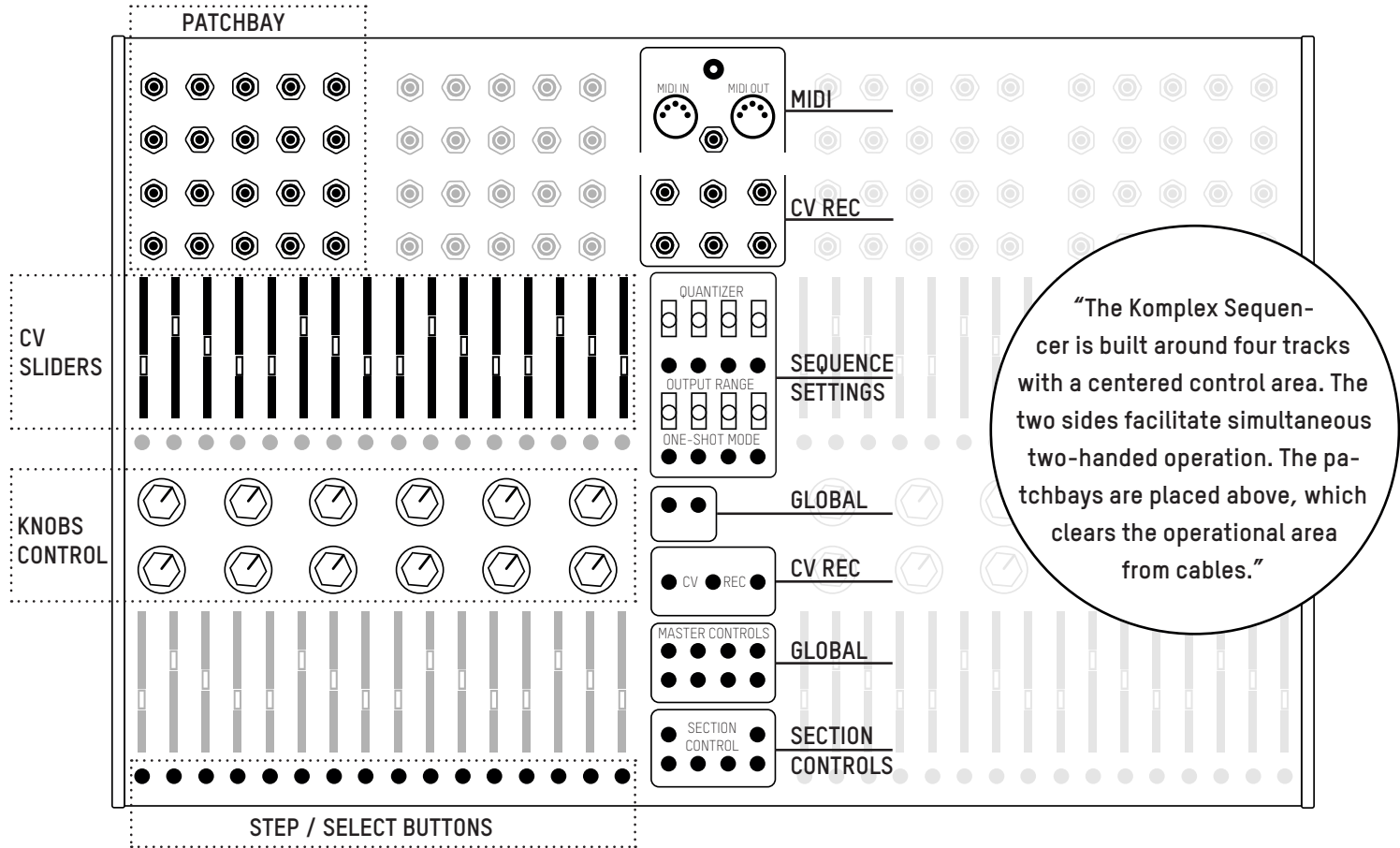
**DRUNKEN TIMING:** Use an irregular gate pattern of one sequencer as a clock source for another sequencer. Patch the gate output of the gate producing sequencer into the clock input of the other sequencer.
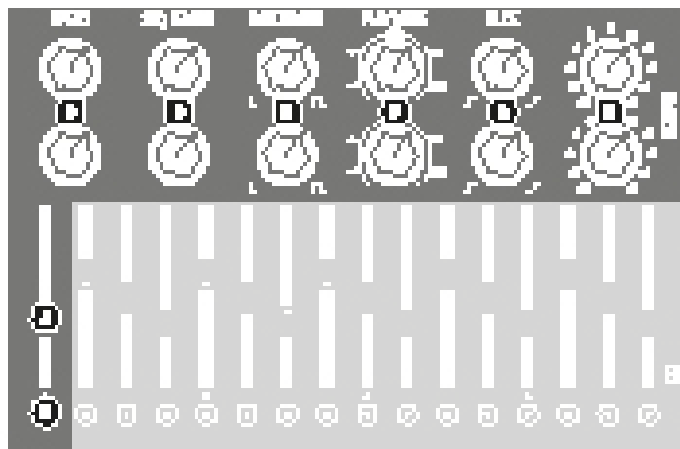
# PATCH SHEET

COPY THIS PAGE AND DRAW YOUR FAVOURITE PATCHES

# GENERAL VIEW

PATCHBAY

MIDI

CV REC

CV
SLIDERS

QUANTIZER

OUTPUT RANGE

ONE-SHOT MODE

SEQUENCE
SETTINGS

GLOBAL

CV REC

KNOBS
CONTROL

CV REC

MIDI IN    MIDI OUT

CV    REC

MASTER CONTROLS

GLOBAL

SECTION
CONTROL

SECTION
CONTROLS

"The Komplex Sequencer is built around four tracks with a centered control area. The two sides facilitate simultaneous two-handed operation. The patchbays are placed above, which clears the operational area from cables."

STEP / SELECT BUTTONS

# SEQUENCER CONTROLS



**A CV SLIDER**
Sets the CV, MIDI Note or MIDI CC value per step. CV and MIDI can be sent simultaneously.

**B STEP SELECT BUTTONS**
Multi-function control for per-step programming of the SECTION CONTROLS features.

**C SPEED**
Sets the base tempo of the sequencer.

**D SEQUENCE LENGTH**
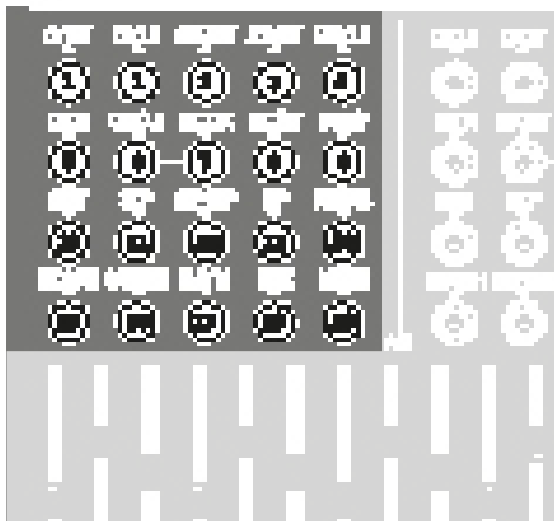Sets how many steps a sequence contains. The step select buttons show how long the sequence is when the control is touched.

**E GATE LENGTH**
Sets the gate length. Maximum gate length will produce tied gates between steps.

**F PLAY MODE**
Sets the order in which the steps are played: Forward, Reverse, Ping-Pong, Ping-Pong Reverse and Random. Reverse and Ping-Pong Reverse start with the last step and send the EOS (End of Sequence) Trigger on the Sequence Start Point (SSP).

**G GLIDE**
Sets the portamento time for steps in which glide is active. Can be used for acid-style slides!

**H DIVISION**
Sets the division of the SPEED knob (internal clock) or external clock. ":4" is short for "quarter note" and will advance the sequence one step for every clock trigger, assuming a 4/4 musical environment. Accordingly ":8", ":16" and ":32" assumes you are sending one clock trigger for two 8th, four 16th or eight 32nd notes. ":3" will produce triplets, ":2" assumes two triggers (half a bar), "x1" assumes 4 triggers (1 bar in 4/4 context) received for every step moved and so on. Analog / MIDI Clock Mode setting applies.

All knob controls are 0 - 5V internally but the corresponding CV inputs accept bipolar signals if you use the knob as a CV bias. Therefor any CV signal between -5V and +5V can potentially be used.



# PATCHBAY INPUTS & OUTPUTS

**1** **CV OUT (Output)**
The CV output of the sequencer. There are two independently buffered outputs for each sequencer.

**2** **GATE OUT (Output)**
Outputs a positive gate on any step that has a gate set. If Gate Length is set to maximum, the gates will be tied between steps.

**3** **SOS OUT (Start Of Sequence Output)**
Outputs a trigger according to the SOS trigger mode setting.

**4** **EOS OUT (End Of Sequence Output)**
Outputs a trigger every time the sequence reached the last step. Mode Menu setting defines if the EOS trigger is generated at the beginning or end of the last step.

**5** **CLOCK IN (Input)**
Set the speed of the sequencer via an external clock signal. Overrides the SPEED knob. DIVISION knob setting applies.

**6** **CLOCK OUT (Output)**
Outputs the clock as set by SPEED or external clock. DIVISION knob setting does not apply, this outputs the "raw" clock.

**7** **REC CLK (Input)**
Clock input for the corresponding CV Recorder bank. The CLOCK OUT is normalled to this input. See CV RECORDER section for more info.

**8** **REC OUT (Output)**
CV output of the corresponding CV Recorder bank (A, B, C or D). See CV RECORDER section for more info.

**9** **TRANSP (Input)**
Transposes the sequencer's CV and MIDI output by the amount of CV applied.

**10** **START (Input)**
When this input receives a positive pulse, the sequence starts playing or pauses / resets according to the Reset Mode setting.

Get started with routing the CV Out into one parameter. Then cross-patch all four sequencers and use more CV to advance into more Komplex sounds.

**11** STOP (Input)
An incoming pulse resets the sequence back to its sequence start point and stops the sequencer.

**12** SKIP STEP (Input)
When a positive voltage is applied to this input, the step is skipped in accordance with the Skip Mode setting.

**13** SSP (Input)
Sets the sequence start point and defines at which step the sequence starts.

**14** REPEATS (Input)
Sets 1 to 16 repeats with CV. See Section Controls and CV Tables for more information.

**15** SEQ LGTH (Input)
Sets the sequence length from 1 – 16 steps.

**16** GATE LGTH (Input)
Sets the gate length of the sequence of the current step. Maximum gate length will produce tied gates.

**17** PLAY M (Input)
Select the play mode of the sequence.

**18** GLIDE (Input)
Control the glide amount for steps with glide set.

**19** DIVISION (Input)
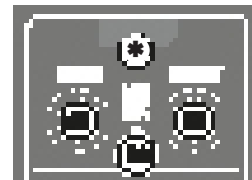Set the division of the SPEED knob or external CLOCK IN.

OUTPUT          INPUT

# MIDI SECTION



**20** MIDI IN (Input)
Receives incoming MIDI clock, start and stop signals.

**21** MIDI OUT (Output)
Sends MIDI information as assigned by the four sequencers.

**22** MIDI CLK (Output)
Use the clock of this output when you want to sync a sequencer to a MIDI clock. It converts a digital MIDI clock to an analog clock which can be patched into any of the four sequencer's CLK INs. For tight syncing this clock output is 24ppqn and you need to set any sequencer that receives it to MIDI Clock Mode in the Mode Menu.

**✱** DC POWER INPUT
Only use the KOMA adapter shipped with the unit. The Komplex powers on automatically when plugged in.

# SEQUENCER SETTINGS
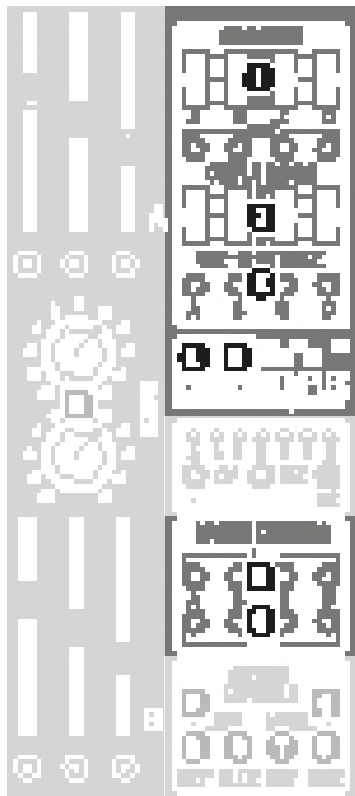
**I QUANTIZER**
Scales the analog CV output to V/oct, selectable in chromatic, major and minor scales. Use the on/off buttons to switch the quantizer on or off per sequencer.

**J OUTPUT RANGE**
Sets the voltage range of the analog CV Output, choose between 2, 5 and 9 volts. Also affects the octave range for sequencers that output MIDI Notes. MIDI Velocity and CC messages are not affected by this setting and always output between 0 and 127. Keep in mind that the Unipolar / Bipolar Mode Menu setting affect the CV output as well. Transpose CV modulates the output regardless of the Output Range switch setting.

**K ONE SHOT MODE**
When engaged, the sequence only plays once and does not repeat when it reaches its end.

**L GLOBAL PLAY / PAUSE**
Starts all 4 sequencers or pauses / resets them at once. Pause / Reset mode setting applies.

**M GLOBAL STOP**
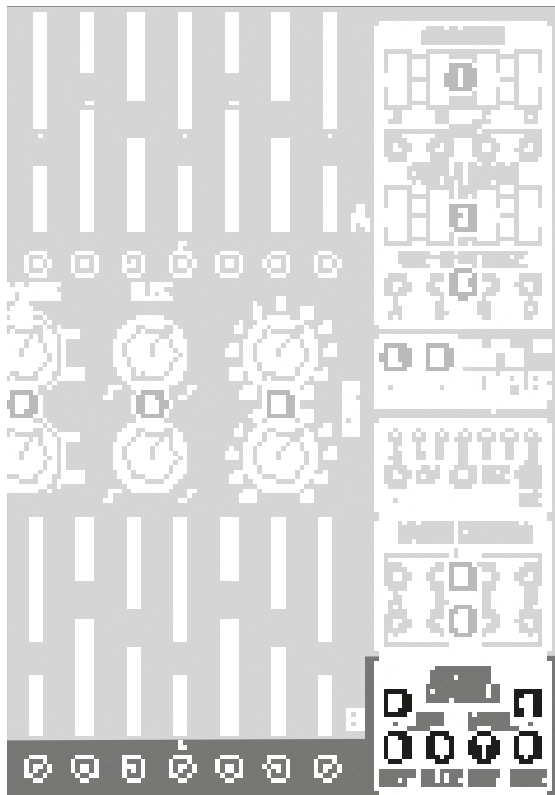Stops and resets all sequences at once to their corresponding sequence start points.

**N PLAY / PAUSE**
Starts or pauses / resets the sequencer depending on the Pause / Reset mode setting.

**O STOP**
Stops and resets the sequence to its sequence start point.

# SECTION CONTROLS



**P** **REPEATS**
Use the step select buttons to select which steps will repeat. Once a step is selected, the position of the blinking step select button will indicate how many times it will repeat. Press step 1-16 to set how many repetitions the step will make.

**Q** **MODE**
Press this button to access the Mode Menu settings. Change various sequencer settings and MIDI parameters. For more information, check out the MODE MENU section.

**R** **STEP**
The step select buttons indicate which steps are active. Ones that are deselected behave according to Step Skip setting in the Mode Menu.

**S** **GLIDE**
When a step is selected, the setting of the GLIDE control is applied.

**T** **SSP**
The step select button indicates the sequence start point. Change it by pressing a step select button.

**U** **GATE**
Sets which steps output a gate at the GATE OUT output. When sending MIDI Notes or CC messages, only steps with active gates will produce MIDI Notes or CC messages.

# CV RECORDER

The CV Recorder is a "sample & store" type CV recorder.

During recording, every time a trigger received at the clock input the current value present at the CV IN is stored in a sequential record. Banks A–D have their clock input in the corresponding sequencer's patchbay area. Banks 1-3 have their clock input in the CV Recorder patchbay are.

During playback, the CV Recorder progresses one step in the recorded sequence for every trigger received at the corresponding clock input. Pauses can be realized by sending clock triggers while no signal is present at the CV IN. Banks A–D can all be played simultaneously and one of banks 1–3 can be played independently. Every bank can record up to 32 steps.
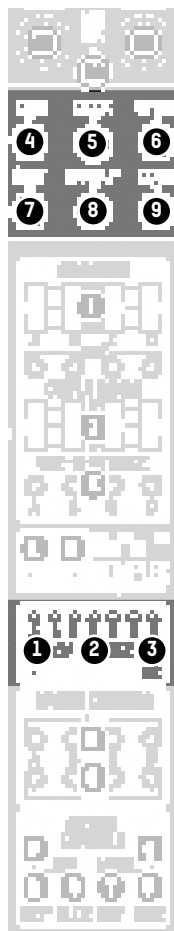
**1 PLAY**
Starts playing the selected CV Bank.

**2 RECORD**
When engaged, the CV Recorder starts recording into the selected bank.

**3 SET**
Selects a CV Recorder bank.

**4 CV IN (Input)**
Patch CV to be recorded into this input.

**5 CLOCK (Input)**
Trigger input for banks 1 - 3.

**6 CV OUT (Output)**
The CV output for banks 1 - 3. Banks A - D get sent via their own REC OUT jacks. During recording of any bank, the current CV signal being processed is also sent via this output unless any of banks 1 – 3 is currently playing (thus sending a signal through this output).

**7 START (Input)**
When this input receives a positive trigger, the selected sequence starts playback. Any given CV Recorder bank always needs a clock signal to start playback. Be sure to patch a clock into CLOCK (5) to start playing banks 1 – 3.

**8 BANK UP/DOWN (Input)**
Only one of banks 1 -3 can play at any given time. Send triggers to these inputs to shift the currently playing sequence up or down.

# CV TABLES

The following tables provide a table of voltages to change between different parameters.

## Table for Play Mode

| Forward | Reverse | Ping Pong | Reverse P.P. | Random |
|---------|---------|-----------|--------------|--------|
| → | ← | ←→ | ←→ | RDM |
| 0-1 V | 1-2 V | 2-3 V | 3-4 V | 4-5 V |

## Table for Division

| :32 | :16 | :8 | :4 | :3 | :2 | x1 | x2 | x3 | x4 | x8 |
|-----|-----|----|----|----|----|----|----|----|----|----|
| 0-0.45V | 0.45-0.91V | 0.91-1.36V | 1.36-0.82V | 1.82-2.27V | 2.27-2.73V | 2.73-3.18V | 3.18-3.64V | 3.64-4.1V | 4.1-4.54V | 4.54-5V |

## Table for SSP, Repeats & Sequence Length

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| 0.0-0.31V | 0.31-0.63V | 0.63-0.90V | 0.94-1.25V | 1.25-1.56V | 1.56-1.88V | 1.88-2.19V | 2.19-2.5V | 2.5-2.81V | 2.81-3.12V | 3.12-3.44V | 3.44-3.75V | 3.75-4.06V | 4.06-4.38V | 4.38-4.69V | 4.69-5V |

**The best you can do is try out for yourself and find the sweet spots ;)**

# MODE MENU

On the left page you find sequencer settings. On the right page you find MIDI settings.



**1** Skip Step Behavior

**1. Skip Mode:** Deactivated steps are skipped altogether as if they wouldn't exist.
**2. Hold Mode:** Deactivated steps are skipped, but for the period of the skipped step, the previous step's value is held. If the previous step has a gate programmed, the skipped steps will also produce a gate. Repeats on skipped steps are ignored.
**3. Pause Mode**: Deactivated steps will not produce a gate, nor send CV or MIDI Notes. The sequencer will rest for the time of the skipped step. Repeats on skipped steps are ignored.

**2** Repeat Mode

**UNLIT**: "Simple repeat" mode is active. A step repeats as many times as set consecutively.
**LIT**: "Ratcheting repeat" mode is active. The repeats are fit into 1 step's length, i.e., with repeats set to 4, the step is repeated 4 times within 1 step's length. Gates are repeated as well.

**3** Bipolar CV / Gate Options

**1. Unipolar:** CV output of the sequencer is unipolar. **2. Bipolar:** CV output is bipolar. 0 Volts then is in the middle of the fader. MIDI settings not affected. **3. Tied Gates**: When this option is LIT, the sequencer will tie gates of adjacent steps when the Gate Length is at maximum. The Tied Gates mode is independent from Unipolar/Bipolar settings.

**4** SOS Trigger Mode

**UNLIT**: SOS trigger is generated every time a start signal is received (either by pressing the play button, sending a trigger to the START input in or via MIDI) **LIT**: SOS trigger is generated every time at the beginning of the sequence start step.

**5** EOS Trigger Mode

**UNLIT**: EOS trigger is generated at the end of the last step of a sequence. **LIT**: EOS trigger is generated at the beginning of the last step of a sequence.

**6** Pause / Reset Mode

**UNLIT**: Pause Mode. A start signal via pressing a Start/Pause button, receiving a trigger via START or MIDI input will start, pause or restart a sequence. **LIT**: Reset Mode. A start signal via pressing a Start/Pause button, receiving a trigger via START or MIDI input will start or reset a sequence.

**7** Swing Mode

**UNLIT**: No swing is set. **LIT**: Swing is set. Press this button to set the swing amount by selecting any of the buttons between steps 1 and 6. The amount of swing is stated as the percentage of time the dotted note occupies: **Step 1:** 50% (no swing) **Step 2:** 54%, **Step 3:** 58% **Step 4:** 62%, **Step 5:** 66% **Step 6:** 71%
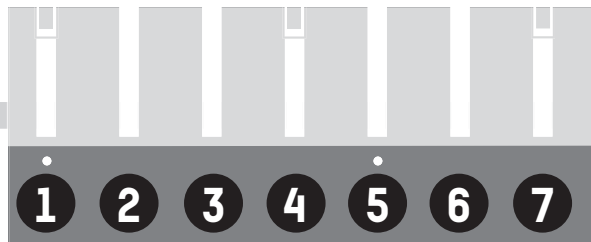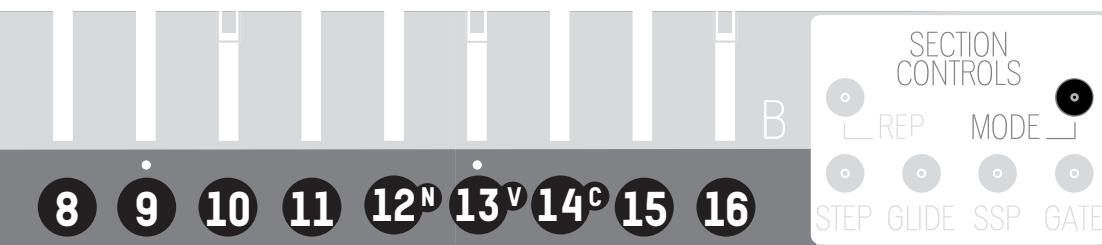
**8 MIDI Octave Select**
Press this button to set the base MIDI Octave by selecting any of the buttons between steps 1 and 10. Step 1 is the lowest octave, Step 10 is the highest octave.

**9 Analog/MIDI Clock Mode**
**UNLIT**: The sequencer's Division knob operates normally when synced to an analog clock.
**LIT**: When syncing the sequencer via MIDI clock, the MIDI clock jack outputs one pulse per MIDI clock pulse which follows a 24 pulses per quarter note standard. Set step select button 9 to lit, so the Division knob is scaled and operates normally when synced via MIDI.

**10 MIDI Start/Stop Mode**
**UNLIT**: The sequencer does not receive MIDI start and stop information.
**LIT**: The sequencer reacts to MIDI start and stop.

**11 MIDI On/Off**
**UNLIT**: The sequencer sends no MIDI information.
**LIT**: The sequencer sends MIDI information according to the MIDI Mode settings.

**12 MIDI Mode**
Set the type of MIDI message the sequencer generates. Only one button can be selected at a time.

**12**: Note   **13**: Velocity   **14**: CC message

**15 MIDI Channel**
Press this button to select the MIDI channel. Then select the MIDI channel of your choice by selecting a step between 1 - 16.

**16 MIDI CC Number**
If MIDI CC is being sent, press this button to specify the CC number between 0 and 127. The CC number is composed with two numbers referred to as x1 x2. The 16 step select buttons correspond to numbers 0-15.
First, select the value of x1 (possible numbers 0 - 12). Then select the value of x2 (possible numbers 0 - 9). For example: 17 is x1 = 1, x2 = 7; 107 is x1 = 10, x2 = 7. Invalid CC numbers will not be accepted.

# "THIS IS NOT A MANUAL"

## KOMA
ELEKTRONIK

FSC