INTRODUCTION

Flexible Eurorack signal paths under gate or trigger control: that is the basic principle behind Route 4. Consisting of a pair of complementary routing sections, it grants access to a new level of signal routing options.

The module's top section is a 4-to-1 router. Any of the four signal inputs may be selected to be mixed into the section's output, as determined by the control inputs.

Control can either be gate or latch driven—in the latter case, the signal inputs are toggled on and off by received trigger pulses. Meanwhile, the solo/multi switch determines whether the inputs are exclusive, or if multiple may be active at the same time.

With each input socket biased by a +1 V precision voltage source when left unused, gate or trigger controlled transposition of pitch sequences becomes a breeze.

On the bottom, the 1-to-4 router provides the same feature set, with a single input being routed to up to four outputs and normalisation between the sections adding some patching convenience.

All signal paths are designed for use with any Eurorack signals, whether they be control voltages, audio or gate streams. Visual feedback is provided by 10 responsive LEDs, continually displaying the status of the routers.

With Route 4, an 8 HP super-flexible analogue mixing and routing powerhouse has arrived to fuel your patching imagination. The ability to redirect signals within a modular system on the fly, with an unparalleled level of control, is sure to excite even the most seasoned patcher.

CONTENTS

In the Route 4 box, you'll find:

- Product card, stating serial number and production batch.
- 16-to-10-pin Eurorack power cable.
- Mounting hardware: two black M3 x 6 mm hex screws, two black nylon washers and a hex key.
- The Route 4 module itself, in a protective cotton bag.

If any of these items are missing, please contact your dealer or support@joranalogue.com.

SIGNAL FLOW
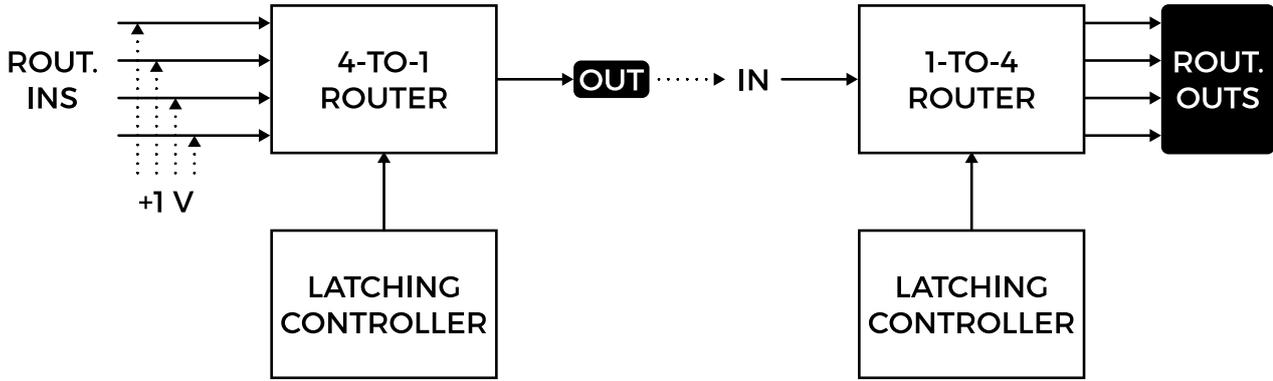
CONTROLS & CONNECTIONS

1   GATE/LATCH SWITCH

The gate/latch switch determines how Route 4 will respond to its control inputs. In gate mode, signal routing channels are only enabled as long as the corresponding control input is high.

When switched to latch mode, a rising edge on a control input will toggle the state of the corresponding routing channel between enabled and disabled.

Each section has its own gate/latch switch, allowing different behaviour to be selected for the module's top and bottom routers.
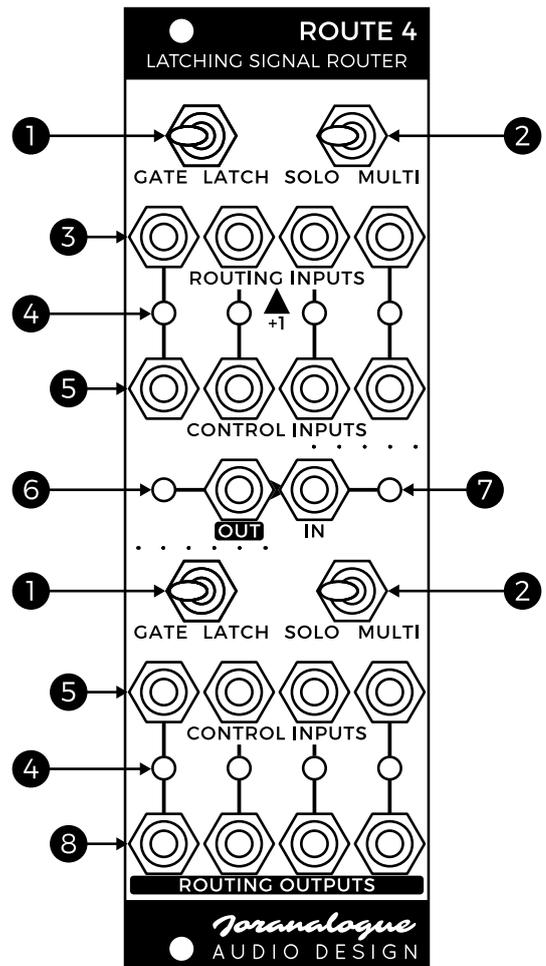
2 SOLO/MULTI SWITCH

When this switch is in solo mode, only one signal routing channel may be active at a time. A rising edge on any control input will disable all other routing channels.

In this mode, applying simultaneous rising edges to two or more inputs will trigger a global reset, disabling all channels.

When the switch is set to multi mode, any number of channels may be enabled simultaneously.

Each section has its own solo/multi switch, allowing different behaviour to be selected for the module's top and bottom routers.

3 TOP SECTION ROUTING INPUTS

The top section of Route 4 is a 4-to-1 router. Up to four channels of audio, CV or gates may be added together, as determined by the control inputs and mode switches.

Each input socket is equipped with a precision +1 V normalisation. This means that it is possible to create 1 V voltage steps, up to +4 V, when all sockets are left unused. It also allows pitch CV information, applied to one of the sockets, to be transposed in octave steps, from 0 up to 3 octaves.

4 CONTROL LEDS

The status of each routing channel is displayed on the corresponding LED in real time, providing valuable visual feedback.

5 CONTROL INPUTS

The control inputs are used to enable and disable routing channels. They function as either gate or trigger inputs, depending on the state of the gate/latch switch.

All of Route 4's control inputs are uniquely designed to be driven reliably even from weak, slow, bipolar signals. They feature Schmitt action, with a +2 V low and +3 V high logic threshold.

6 TOP SECTION ROUTING OUTPUT

This impedance-compensated output provides the mix of the currently enabled routing inputs, with high accuracy, suitable for pitch CV use.

7 BOTTOM SECTION ROUTING INPUT

The bottom section of Route 4 is a 1-to-4 router. Any signal applied to this input socket may be sent to up to four destinations.

When nothing is plugged into the socket, the output of the top section is sent to this input by default.

8 BOTTOM SECTION ROUTING OUTPUTS

When enabled, these impedance-compensated outputs provide identical copies of the section's input signal. Their high accuracy makes them suitable for pitch CV use.

PATCH IDEAS

SEQUENCED TRANSPOSITIONS

Route 4 is a great tool for creating melodic variation. Patch different step gates from a sequence into the control inputs of the top section. Now, each time the sequence reaches a certain step, its corresponding channel will be activated, adding +1 V to the output thanks to the normalisation on each routing input. This CV signal can be used as a 1 V/octave pitch source for a voice.

Different variations can be selected using the mode switches: simple +1 octave jumps on certain notes (gate), or rising and falling octave intervals, up to +4 and at twice the sequence length (latch/multi).

Patching different fixed or variable voltages into the inputs creates even more possibilities and melodic interest.

MULTI-ENVELOPE AUDIO GATING

Route 4 can also be used to switch audio rate signals. Patch different outputs of one oscillator into the top section routing inputs, and different synchronised looping envelopes or LFOS, with varying slope times, into the control inputs.

As the different oscillator waveforms are switched at variable rates, a rhythmically evolving timbre is created. Increase the speed of the envelopes/LFOs into the audio range for AM-like tones.

EFFECTS CONTROLLER

Send an audio signal to the input of the bottom section, and connect the routing outputs to various signal processors: filters, wavefolders, delays...

Either use manually generated gates or apply external gates to the control inputs and mix the resulting signals together with a mixing module. Now, the incoming control signals cause different effects on the original signal to be applied.

MODULATION DISTRIBUTOR

Another application for Route 4 is as a gate or trigger controlled modulation distributor.

Patch a modulation source (an LFO, randomness, chaos, a sequence...) into the input of the bottom section. Send the routing outputs to various modulation inputs of oscillators, filers etc. Use four different oscillators to drive the control inputs.

This creates modulations that are turned on and off, according to the free-running oscillators. Provide each one with a reset on the first step of a sequence to create a periodic pattern.

MULTITIMBRAL PITCH CONTROLLER

Patch four voices and mix them together. Patch a sequencer's pitch CV output into the bottom section routing input and the routing outputs to the 1 V/octave inputs of the various voices.

Now, connect several manually adjusted DC voltages to the control inputs. As the control input voltages change, different voices are switched between continually playing their base note or the sequence. Automate the process by deriving these voltages from a source of randomness or chaos and a set of attenuators.

SPECIFICATIONS

MODULE FORMAT

Doepfer A-100 'Eurorack' compatible module
3 U, 8 HP, 35 mm deep (inc. power cable)
Milled 2 mm aluminium front panel with non-erasable graphics

MAXIMUM CURRENT DRAW

+12 V: 35 mA
−12 V: 20 mA

POWER PROTECTION

Reverse polarity (MOSFET)

I/O IMPEDANCE

All inputs: 100 kΩ
All outputs: 0 Ω (compensated)

OUTER DIMENSIONS (H X W X D)

128.5 x 40.3 x 52 mm

MASS

Module: 115 g
Including packaging and accessories: 200 g

SUPPORT

As all Joranalogue Audio Design products, Route 4 is designed, manufactured and tested with the highest standards, to provide the performance and reliability music professionals expect.

In case your module isn't functioning as it should, make sure to check your Eurorack power supply and all connections first.

If the problem persists, contact your dealer or send an email to support@joranalogue.com. Please mention your serial number, which can be found on the product card or on the module's rear side.

With compliments to the following fine people,
who helped to make Route 4 a reality!

Ben 'DivKid' Wilson   Bernhard Rasinger

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