MANIKK 8 - OTTO

Passive or Active Expander - Eurorack Module

Users Guide

MANIKK OTTO

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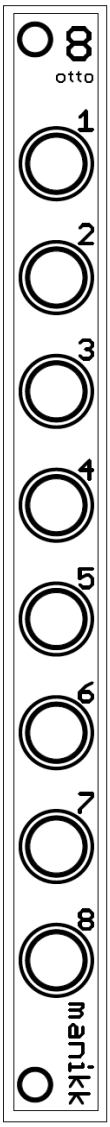
Front panel layout



Welcome

Congratulations to your purchase of this module.

The manikk Otto exists in two versions:

1. manikk Otto Passive
2. manikk Otto Active Expander

The difference is that the active expander can only be used as an active output expander. Used together with some of the other manikk modules to give access to additional features and outputs. The outputs of the active expander are always GND or +5V.

The Otto Passive is completely passive, and you can use it for many different things, only limited by your own imagination. Have you ever wished that you had a jack hooked up to something…? Maybe this module is the answer?

Both have a pin strip on the backside, where you can connect stuff to the jacks.

The passive expander can very easily be turned into a a passive multiple by attaching a header-strip to the pins, where you can solder the header pins together in the combination you want: for example: 4+4, 3+5, 2+6 or 8.

Make sure that you order the correct one (active or passive), because this can NOT be changed on the module itself afterwards.

Happy tweaking!

Overview

Manikk Otto is a narrow 2HP module with 8 jacks.

On the backside there is a pinstrip with 4 pins for each of the 8 jacks: signal+GND and break-signal+GND.

On the active expander there are also some pins for communicating digitally with the module from a manikk master module.

The Otto Passive can be used to create:

- passive multiples
- in/out connectors to other equipment
- normalized patch bays
- DIY creations
- Anything where you want some jacks in your rack and simple pins to access the jacks.

The Otto Active Expander is used for:

- expanding the capabilities of some other manikk modules, for example the ADSR module.
- DIY – build your own module with 8 jacks and use the Otto Passive as the front panel. Or control it from an Arduino…?!

NOTE! Make sure you order the correct one, active or passive, because you can NOT change this on the module afterwards.

manikk Otto Passive

Passive pins

The passive pins on the backside can be used to create passive multiples, connect to other modules or functions or for your DIY projects.

Pin (top to bottom)	Function
1	J1 – Jack signal (top jack)
2	GND
3	J2 – Jack signal
4	GND
5	J3 – Jack signal
6	GND
7	J4 – Jack signal
8	GND
9	J5 – Jack signal
10	GND
11	J6 – Jack signal
12	GND
13	J7 – Jack signal
14	GND
15	J8 – Jack signal (bottom jack)
16	GND
17	B1 – Break, normalized signal connected to J1 when no plug in the jack

18	GND
19	B2 – Break, normalized signal connected to J2 when no plug in the jack
20	GND
21	B3 – Break, normalized signal connected to J3 when no plug in the jack
22	GND
23	B4 – Break, normalized signal connected to J4 when no plug in the jack
24	GND
25	B5 – Break, normalized signal connected to J5 when no plug in the jack
26	GND
27	B6 – Break, normalized signal connected to J6 when no plug in the jack
28	GND
29	B7 – Break, normalized signal connected to J7 when no plug in the jack
30	GND
31	B8 – Break, normalized signal connected to J8 when no plug in the jack
32	GND

Create a passive multiple

You can easily create any passive multiple you want, by using a pin-header and soldering the J-pins together as you choose.

For the passive expander, there is a 15-pole header included, that makes the expander a passive 4+4 multiple out of the box. This header is connected to the top 9 pins (J1, GND, J2, GND, J3, GND, J4, GND, J5, GND, J6, GND, J7, GND, J8, GND). If you don't want this behaviour, just remove the 15-pole header.

Create your own passive multiple divider header

Examples if you want to create multiple-divider-headers yourself.

4+4 multiple: solder J1+J2+J3+J4 together and then J5+J6+J7+J8 together.

3+5 multiple: solder J1+J2+J3 together and then J4+J5+J6+J7+J8 together.

2+6 multiple: solder J1+J2 together and then J3+J4+J5+J6+J7+J8 together.

2+3+3 multiple: solder J1+J2 together, J3+J4+J5 together, J6+J7+J8 together.

8 multiple: solder J1+J2+J3+J4+J5+J6+J7+J8 together.

manikk Otto Active Expander

Top passive pins

The top passive pins are exactly the same as for the Otto Passive described above. The difference is that they are not passive anymore. Onboard is a chip that outputs 0V or 5V for each jack.

The top passive pins and bottom communication pins are separated by a white line on the pcb.

NOTE! On the active expander, these top signal and break-signal pins will all be controlled digitally by the chip on the expander backside. The active expander can therefore NOT be turned into a passive multiple for example. You should not solder any pins together on an active expander. All pins on the active expander are output only.

Bottom communication pins

The six bottom pins are used to control the eight output jacks from another manikk module or microprocessor.

Onboard are a 74HC595 chip that can be controlled by SPI. The chip is on the backside of the active expander.

Communication pins (the bottom 6 pins)

Pin (top to bottom)	Function
1	GND
2	+5V
3	MOSI in
4	Cascaded MOSI or MOSI out. When two or more active expanders are connected in series after each other, this pin should be connected to MOSI in on the next active expander in the chain.
5	SS
6	SCK

These 6 pins should be connected to the pins with the same names. Female to female dupont cables can be used.

Cascading

Two or more active expanders can be cascaded.

Pin 4, the "cascaded mosi out" should in that case be connected to the pin 3 MOSI in on the next active expander down the chain.

The other signals, GND, +5V, SS and SCK should be connected in parallell for all the expanders. Only the MOSI in and MOSI out are connected in serial chain. You may need special cables for the parallell connections, depending on how many active expanders you have in the chain.

NOTE! Read the manual for the master manikk module. How many active expanders can it support? Normally only one. See also the manual for that manikk master module, how to connect the active expander or expanders.

Expander output jacks

High=+5V, Low=0V

Jack (top to bottom)	Function
1	High +5V or low 0V
2	High +5V or low 0V
3	High +5V or low 0V
4	High +5V or low 0V
5	High +5V or low 0V
6	High +5V or low 0V
7	High +5V or low 0V
8	High +5V or low 0V

Current consumption

The active module is connected to +5V and consumes: 2 mA.

More information

You can find more information on the website manikk.com:

- Latest version of this manual
- manikk modules that can be used as masters for the active expander
- Other products, and more…

Warranty

This device has a one (1) year limited warranty starting from the first purchase date.

The warranty covers malfunctions in the device.

The warranty does not cover bad usage, external damage or other abnormal usage.

The device is designed to work in a Eurorack synthesizer system. Other uses are not covered by the warranty.

If you have to use this warranty you need to do the following:

1) Check that the date is still in the warranty-time of 1 year from the date of purchase.
2) Contact the seller where you purchased the device.
3) Send the malfunctioning device to the address given by the seller. You have to pay for this freight yourself. Very important that you attach your return-address to the device, so we know where to return the repaired device.
4) Manikk will repair or replace the device if the problem is covered by the warranty. We will send the repaired device back to you.