

FLAME

μMM - MIDI-TRS-B MERGER/THRU



MANUAL

Version 1.00

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1. Short description

The “ μ MM” combines a MIDI merger, two independent THRU distributors and a TRS-A/B converter in just a small 4HP module. All sockets on the module are in MIDI-TRS-B format.

The basis of the MIDI merger with three inputs and three outputs is a small, powerful ARM processor with sufficient buffer memory. Up to three MIDI streams are mixed together on one output and can also be tapped via two additional outputs. Two LEDs signal how the merger works: one LED shows MIDI activity at the inputs and a second warns of too much data at the inputs.

The second functional group consists of two independent, separate MIDI-THRU distributors. The MIDI data at the respective MIDI input can be picked up and distributed at the three underlying THRU outputs. If necessary, both units can be made into a 1-to-5 distributor by connecting an output from the left group to the input from the right group (stereo cable).

The third functional group is a passive TRS-A to B converter. The TIP and RING pins on the stereo socket are swapped. For example, plug a stereo cable from a TRS-A output into the first jack and a stereo cable from a TRS-B input into the other jack. A MIDI-TRS-A can be connected to a MIDI-TRS-B module. This is also possible the other way around.

2. Hardware / connections

2.1 Connection to the euro rack modular system (Doepfer bus)

The module is delivered with a connected ribbon cable for the Doepfer bus. The red lead marks -12 volt. Connecting the module please note the right polarity!

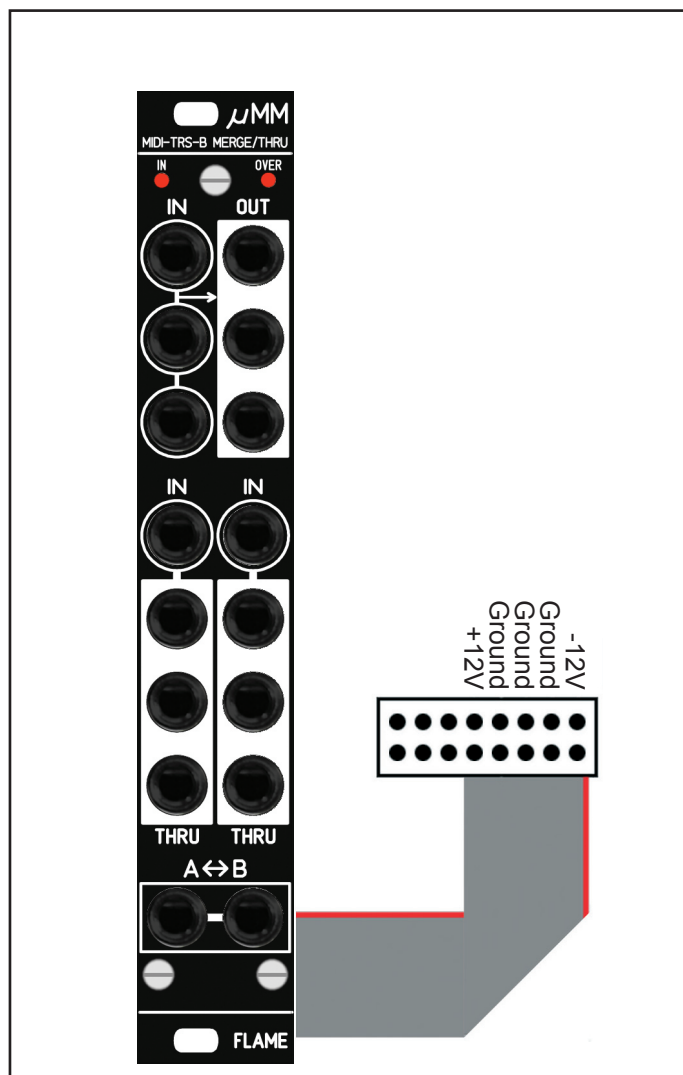
If the module is poled accidentally wrong safety diodes avoid the immediate destruction of the module but further damages cannot be expected.

So please pay attention: Check the connection various times before switching on!

The current consumption of the module is a maximum of +15mA.

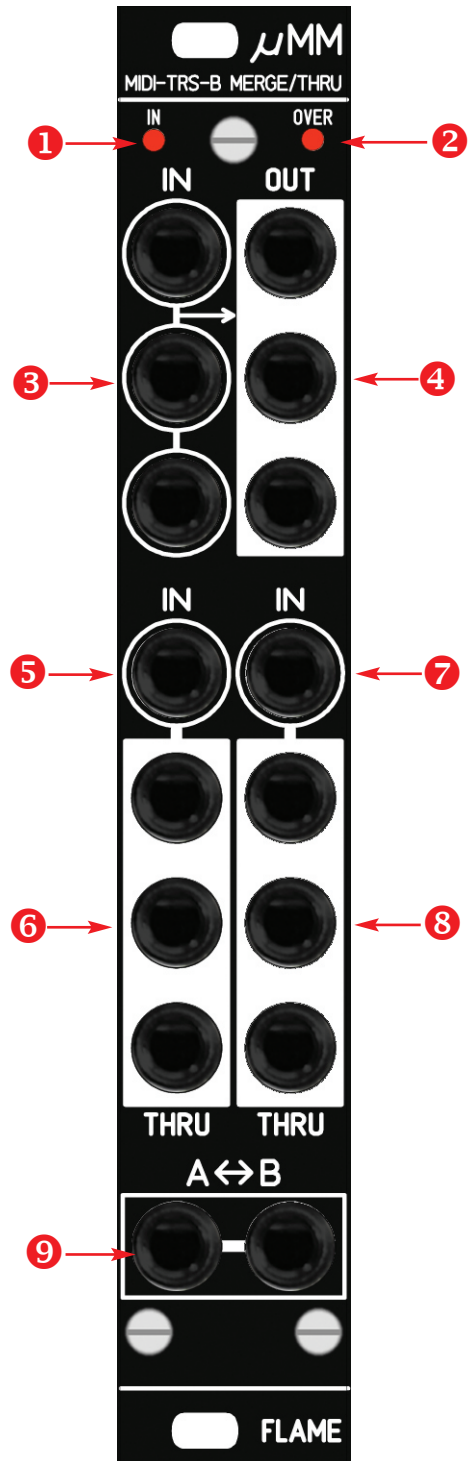
DANGER!

Only connect MIDI devices to the inputs and outputs, but not high CV voltages! This can possibly damage the hardware!



2.2 Module overview

- 1 LED Merger Data Input
- 2 LED Merger Data Overload
- 3 3x MERGER Input
- 4 3x MERGER Output
- 5 THRU-Box-1 Input
- 6 THRU-Box-1 Outputs
- 7 THRU-Box-2 Input
- 8 THRU-Box-2 Outputs
- 9 TRS-A zu TRS-B Converter (passiv)



3. Description

3.1 MIDI Merger

The μ MM module has three MIDI inputs and three MIDI out ports, so that you can mix the data from several MIDI devices together and access it again at up to three outputs. All MIDI data, except “Active sensing”, can be forwarded.

It may be helpful to understand that the module gives priority to certain MIDI data and disables certain data on other inputs.

ACTIVE SENSING

This data is not forwarded to the outputs, but is filtered out at all three inputs in order to reduce the MIDI data stream somewhat.

MIDI CLOCK

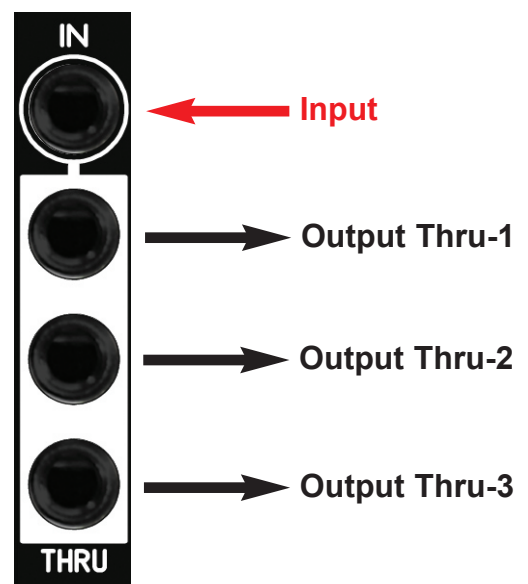
The input at which a START command is first received becomes the “Clock Master” and forwards CLOCK data. START, STOP and CLOCK data are blocked at the remaining inputs until a STOP command has been received at the “Clock Master” input. The input then becomes the “new clock master” again, which receives a START command.

SYSEX data

While an input is processing a SysEx message, it becomes the SysEx master and all messages on the other inputs are blocked until the message on the master input is finished (HexF7 = End of SysEx). If the MIDI cable is pulled out during SysEx reception, reception is automatically ended after a short timeout and all inputs are released again.

3.2 THRU-BOX (MIDI Distributor)

The μ MM module has two independent THRU boxes. Both are independent of the merger processor and forward the MIDI data from the THRU input to the three outputs below. The data received at the input is forwarded to all three outputs and can thus be distributed to multiple devices.

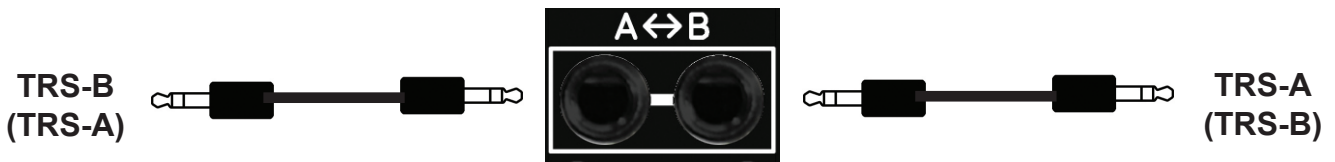


3.3 MIDI-TRS A / B Converter

A simple stereo audio cable can be used to directly connect two MIDI-TRS sockets (TIP and RING are not swapped). The lowest functional group now provides a simple passive MIDI TRS A / B converter. He swaps the TIP and RING connections. This means, for example, A TRS-A can be connected to a TRS-B port with just two stereo audio cables. This is also possible the other way around.



TIP and RING alike!



TIP and RING swapped!

3.4 LED functions

Two LEDs signal the following operating states on the MERGER (and only on this one):

LED: IN (Merger Input)

This LED signals all incoming MIDI data arriving at the three merger inputs.

LED: OVER (Merger Overload)

If the amount of MIDI data at the three inputs becomes too large, the internal buffer may overflow. In this case the LED lights up. In any case, data loss will occur. Make sure the incoming data is reduced. Hardware MIDI controllers often send too many control change commands that are not necessary.

4. Appendix

4.1. Technical details

Connections:

Ribbon cable adapter for Doepfer bus +/-12Volt

Inputs: 6x MIDI (TRS-B standard) 1/8th inch stereo jack

Outputs: 10x MIDI (TRS-B standard) 1/8th inch stereo jack

Current consumption: max. +15mA / - 0 mA

Size: Euro rack format 3HE / 4HP 20x128,5x42mm

4.2 Warrenty

Beginning from the date of purchase a 2-year warranty is guaranteed for this device in case of any manufacturing errors or other functional deficiencies during runtime. The warranty does not apply in case of:

- damage caused by misuse
- mechanical damage arising from careless treatment (dropping, vigorous shaking, mishandling, etc)
- damage caused by liquids penetrating the device
- heat damage caused by overexposure to sunlight or heating
- electric damage caused by improper connecting
(wrong power supply/ jacks/ MIDI connections/ voltage problems).

If you have any complaints please contact your dealer or send an e-mail to:

service@flame-instruments.de

4.3 Terms of production

conformity: CE, RoHS, UL

4.4 Disposal

The device is produced with RoHS-conformity (subject to the regulations of the European Union) and is free of hazardous substances (like mercury, plumb, cadmium and hexavalent chrome). But electronical scrap is hazardous waste. Please don't add this to consumer waste. For an environment friendly disposal of waste please contact your distributor or specialist dealer.

4.3 Support

Updated and additional informations, updates, downloads and more see:

<https://www.flame-instruments.com>

4.4 Acknowledgment

For help and assistance big thanks to: Alex4 und Schneiders Büro Berlin, Thomas Wagner, Anne-Kathrin Metzler, Sebastian Preller und Felix Bergleiter.