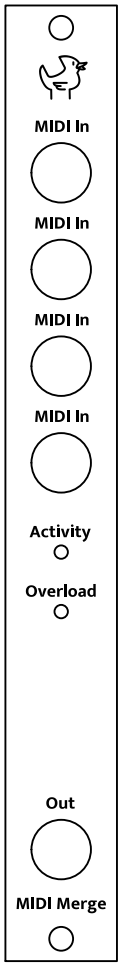
Entineering MIDI Merge

User Manual

v1.0a



Entineering

Introduction

Entineering MIDI Merge is a module for Eurorack synthesizers. It combines data from four MIDI inputs into one MIDI output. By applying rolling status, the MIDI data is compressed, even if the connected keyboards and controllers can't do this. If there is still more data coming in through the four inputs than can be sent through the single output, the "Overload" indicator lights up.

Connecting the Module

Connecting Power

Your Eurorack synthesizer module comes equipped with a 16-pin keyed connector for power supply.

To connect the module:

1. Power Off Your System: Before connecting the module, ensure that your Eurorack case and power supply are turned off.
2. Locate the Power Connection on Your Case: Identify the power headers on your Eurorack case. These headers will also have a 16-pin connector.
3. Use the supplied ribbon cable to connect the module to your Eurorack power supply. The red mark on the ribbon cable identifies the -12V supply line. On the module, the red mark points towards the bottom on the module.
4. Secure the Module: Once connected, mount your module into the case using the appropriate screws, ensuring it is securely in place.

Only use proper Eurorack power supplies with voltages of -12V, +12V and +5V.

Connecting MIDI

To connect a device with a 5-pin DIN connector to the module, you need a MIDI DIN-to-TRS adapter. The TRS jacks on the module use the A pinout that is now included in the official MIDI standard.

To be able to send MIDI data to the module, connect the MIDI Out or MIDI Thru port of your MIDI keyboard, audio interface or similar, to the MIDI In jack of the module.

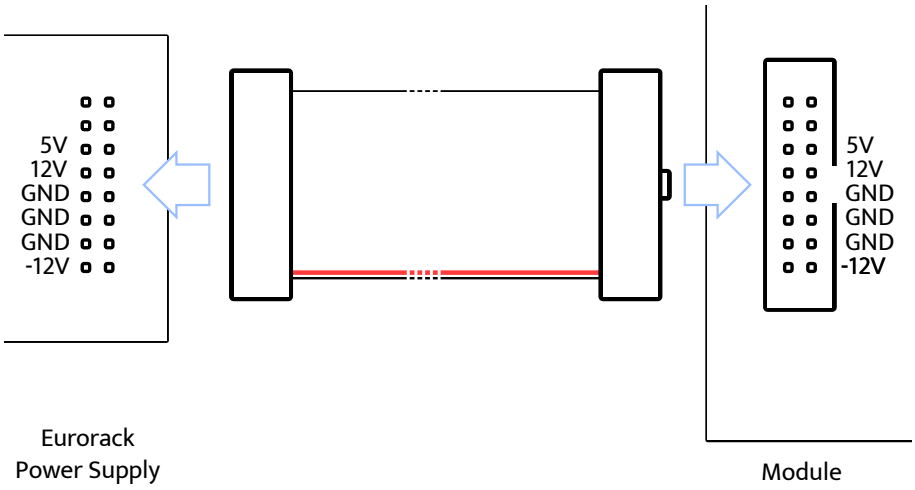


Figure 1: Connecting Power

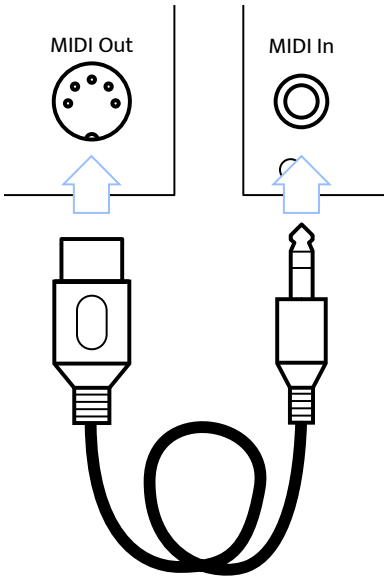


Figure 2: Connecting MIDI

Updating the Firmware

The firmware of the module can be updated by sending MIDI SysEx messages. Visit https://entineering.eu to download the latest firmware.

Entering Update Mode

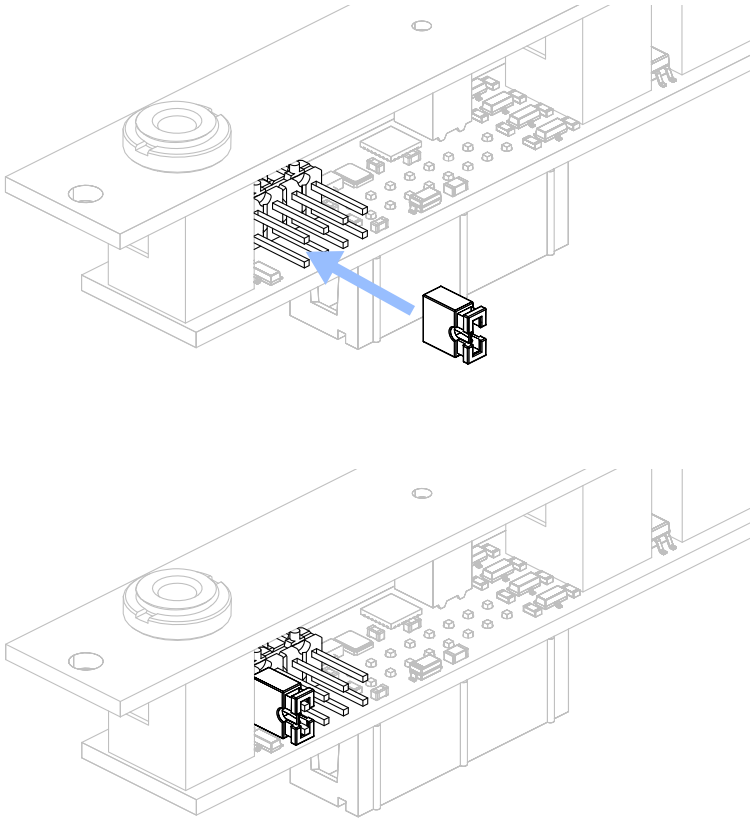


Figure 3: Place the jumper on the two pins closest to the MIDI output to enter update mode.

1. Disable power to the module.
2. Locate the pin header on the side of the module. Use the included jumper to short the two pins closest to the output connector.
3. Enable power to the module
4. A slowly blinking LED indicates that the module is in firmware update mode

Do not short any pins other than the two shown on the picture. Otherwise the module could be damaged.

Transfer New Firmware

Connect a MIDI cable from a PC-MIDI interface to the module. Now send the firmware file in .syx format from your PC to the module. You can disable any delays between messages for faster transfer.

Make sure that no other software or device is sending MIDI data to the module while updating.

Some low-cost USB-to-MIDI adapters do not properly support SysEx messages, in particular those based on the CH345 chip.

Table 1: Recommendations for Software that can be used for sending SysEx files.

Operating System	Software	Where to Get
macOS	SysEx Librarian	https://www.snoize.com/sysexlibrarian/
Linux Command Line	`amidi`	`alsa-utils` package
Windows	MIDI SysEx Transfer Utility	https://apps.microsoft.com/detail/9pfd4ddwgktn

SysEx Librarian

Follow these steps to transmit a new firmware file to the module using SysEx Librarian:

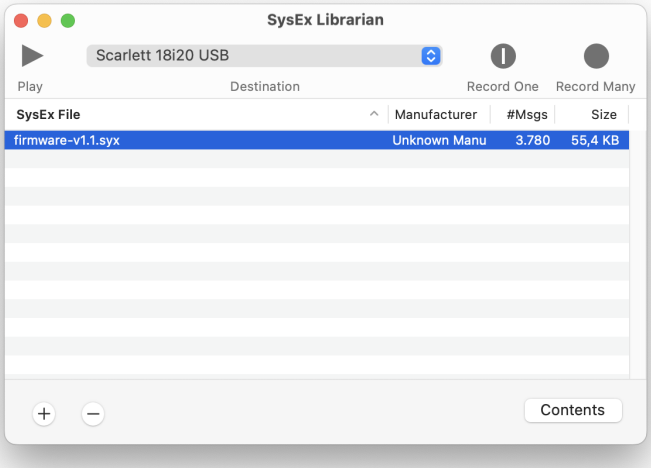


Figure 4: SysEx Librarian

- Add the firmware file to the list of SysEx files in SysEx Librarian.
- Select your MIDI interface in the drop-down menu at the top.
- To speed up the transfer, go to “Settings” under the “SysEx Librarian” menu and set the pause between messages to 0 milliseconds.
- Press the “Play” button in the top left.
- Wait until the file was fully transferred.

`amidi`

Follow these step to transmit a new firmware file to the module using `amidi` on Linux:

- Open a terminal.
- Type `amidi --list-devices` to get a list of your MIDI devices. Note the descriptor in the “Device” column.
- Type `amidi --send=/path/to/firmware-v1.1.syx --port=hw:1,0,0`, where the argument to `--send` is the path to the firmware file, and `--port` is the MIDI device descriptor from the previous step.
- Wait until the file was fully transferred.

MIDI SysEx Transfer Utility

Follow these step to transmit a new firmware file to the module using MIDI SysEx Transfer Utility on Windows:

- Select your MIDI interface in the drop-down menu labelled “MIDI Output Port”.
- Press the button “Pick SysEx File to Send” and choose the downloaded firmware file.
- In the field “Transfer Delay”, enter 0.
- Press “Validate and Send SysEx”
- Wait until the file was fully transferred.

Booting Into New Firmware

1. Disable power to the module
2. Remove the jumper from the pin header
3. Enable power to the module