Entineering MiDiMX
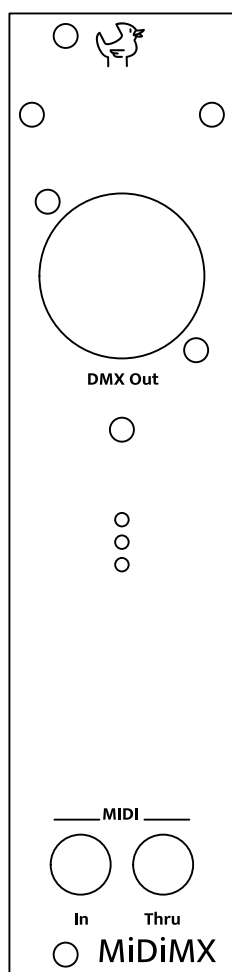
User Manual

v1.0

DMX Out

MIDI

In   Thru

MiDiMX

Entineering

Introduction

Entineering MiDiMX is a module for Eurorack synthesizers that converts MIDI to DMX512. It is intended to control stage lighting fixtures using a MIDI sequencer, DAW or manually via MIDI keyboards.

Each of the 128 possible MIDI notes from C-2 to G8 is assigned to one DMX channel. MIDI velocity and polyphonic aftertouch translate to DMX channel values, i.e. brightness.

Features of Entineering MiDiMX include:

- Converts MIDI Note On, Not Off and Polyphonic Aftertouch messages.
- 128 MIDI notes translate to 128 DMX channels.
- Selectable MIDI channel

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.
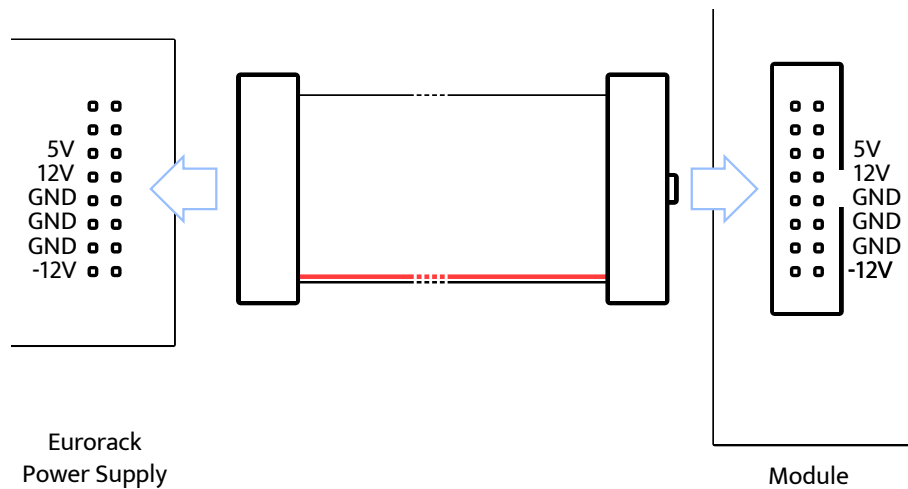
Figure 1: Connecting Power

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.

Connecting DMX

The DMX output is a 3-pin XLR connector. The pinout is as follows:

Pin	Signal
1	GND
2	Data-
3	Data+

Connect the DMX output to the DMX input of the first lighting fixture in the chain. The DMX output of the last fixture in the chain should be terminated with a 110 ohm resistor. The use of DMX cables with 110 ohm impedance is recommended. Up to 32 fixtures can be connected in a single DMX chain. For longer chains, a DMX splitter or repeater is recommended.

Using the Module

Selecting MIDI Channel

MIDI Channel	Switch 1	Switch 2	Switch 3	Switch 4
3	Off	On	Off	Off
4	On	On	Off	Off
5	Off	Off	On	Off
6	On	Off	On	Off
7	Off	On	On	Off
8	On	On	On	Off
9	Off	Off	Off	On
10	On	Off	Off	On
11	Off	On	Off	On
12	On	On	Off	On
13	Off	Off	On	On
14	On	Off	On	On
15	Off	On	On	On
16	On	On	On	On

Sending MIDI Messages

The MiDiMX module interprets the velocity content of MIDI Note On and Note Off messages as DMX channel values. Additionally, Polyphonic Aftertouch messages can be used to control the value of a channel without issueing Note Off and then Note On with a new velocity.

Every MIDI note controls one DMX channel. This means that 128 DMX channels can be addressed. The DMX channel number is the MIDI note number plus one. See Appendix A for a list of MIDI notes and their corresponding DMX channels.

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.
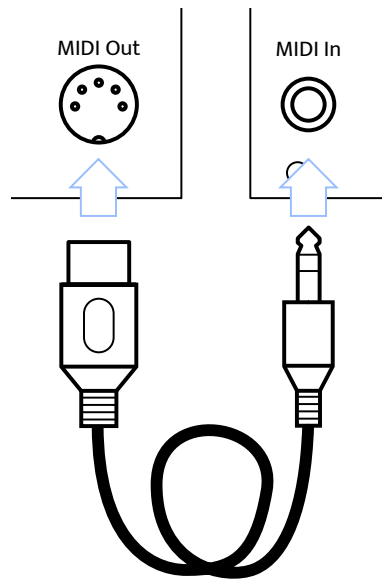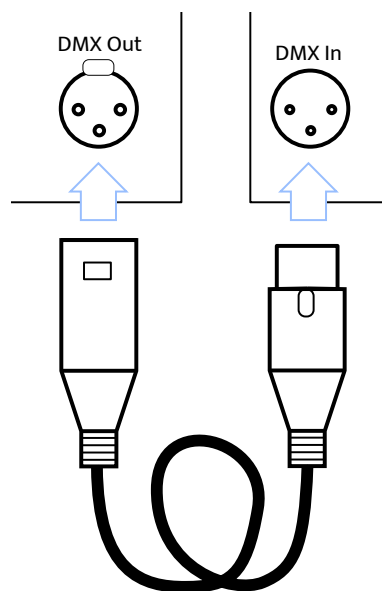
Figure 2: Connecting MIDI

Figure 3: Connecting DMX

Entering Update Mode

1. Disable power to the module
2. Put switch 6 to the ON position
3. Enable power to the module
4. A slowly blinking LED indicates that the module is in firmware update mode

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.

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

Table 3: 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	?	?

Booting Into New Firmware

1. Disable power to the module
2. Put switch 6 to the OFF position
3. Enable power to the module

Appendix A: MIDI Note to Channel List

Note	MIDI Note Number	DMX Channel
C-2	0	1
C#-2	1	2
D-2	2	3
D#-2	3	4
E-2	4	5
F-2	5	6
F#-2	6	7
G-2	7	8
G#-2	8	9
A-2	9	10
A#-2	10	11
B-2	11	12
C-1	12	13
C#-1	13	14
D-1	14	15
D#-1	15	16
E-1	16	17
F-1	17	18
F#-1	18	19
G-1	19	20
G#-1	20	21
A-1	21	22
A#-1	22	23
B-1	23	24
C0	24	25
C#0	25	26
D0	26	27

Note	MIDI Note Number	DMX Channel
D#0	27	28
E0	28	29
F0	29	30
F#0	30	31
G0	31	32
G#0	32	33
A0	33	34
A#0	34	35
B0	35	36
C1	36	37
C#1	37	38
D1	38	39
D#1	39	40
E1	40	41
F1	41	42
F#1	42	43
G1	43	44
G#1	44	45
A1	45	46
A#1	46	47
B1	47	48
C2	48	49
C#2	49	50
D2	50	51
D#2	51	52
E2	52	53
F2	53	54

Note	MIDI Note Number	DMX Channel
F#2	54	55
G2	55	56
G#2	56	57
A2	57	58
A#2	58	59
B2	59	60
C3	60	61
C#3	61	62
D3	62	63
D#3	63	64
E3	64	65
F3	65	66
F#3	66	67
G3	67	68
G#3	68	69
A3	69	70
A#3	70	71
B3	71	72
C4	72	73
C#4	73	74
D4	74	75
D#4	75	76
E4	76	77
F4	77	78
F#4	78	79
G4	79	80
G#4	80	81

Note	MIDI Note Number	DMX Channel
A4	81	82
A#4	82	83
B4	83	84
C5	84	85
C#5	85	86
D5	86	87
D#5	87	88
E5	88	89
F5	89	90
F#5	90	91
G5	91	92
G#5	92	93
A5	93	94
A#5	94	95
B5	95	96
C6	96	97
C#6	97	98
D6	98	99
D#6	99	100
E6	100	101
F6	101	102
F#6	102	103
G6	103	104
G#6	104	105
A6	105	106
A#6	106	107
B6	107	108

Note	MIDI Note Number	DMX Channel
C7	108	109
C#7	109	110
D7	110	111
D#7	111	112
E7	112	113
F7	113	114
F#7	114	115
G7	115	116
G#7	116	117
A7	117	118
A#7	118	119
B7	119	120
C8	120	121
C#8	121	122
D8	122	123
D#8	123	124
E8	124	125
F8	125	126
F#8	126	127
G8	127	128