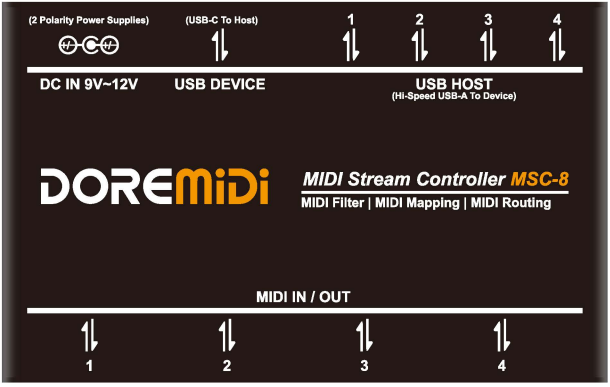
MIDI Stream Controller MSC-8 Instruction

Thank you for using the DOREMiDi MIDI Stream Controller!
MSC-8 can be used for connecting computers, USB and MIDI DIN instruments.
MSC-8 features MIDI hub, MIDI filtering/routing/mapping functions, etc.
For better use of this product's functions, we recommend that you carefully read this instruction manual.

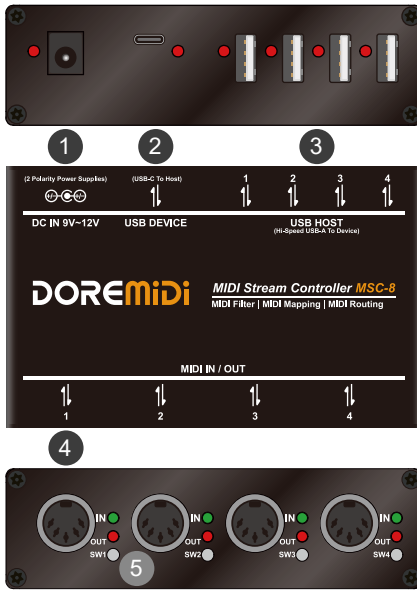


1. Introduction 1
2. Appearance 1
3. Parameters 2
4. Steps for usage 2
4.1. Power supply 2
4.2. Connect a USB MIDI instrument 3
4.3. Connect MIDI 5-pin device 3
4.4. Connect to computer 3
5. Connection diagram 4
6. Configure MIDI Filter/Routing/Mapping 5
6.1. Connect the device 5
6.2. Configure MIDI Message Filter 5
6.3. Configure MIDI Port Routing 6
6.3.1. Factory Default MIDI Routing 6
6.3.2. Routing Operations 6
6.3.3. MIDI Routing Reference 7
1) MIDI Merging 1 7
2) MIDI Merging 2 7
6.4. Configure MIDI Mapping 8
6.4.1. Interface Introduction 8
6.4.2. Typical Applications of Mapping 10
1) Changing the MIDI Note Channel 10
2) Convert CC to PC 10
3) Convert PC to CC 11
4) Convert Note to CC 11
6.4.3. System Exclusive (or SysEx) Mapping 12
1) Interface Introduction 12
2) SysEx Mapping to CC 13
3) CC Mapping to SysEx 13
4) SysEx Mapping to PC 14
5) PC Mapping to SysEx 15
6) MMC Mapping to MIDI Start 15
6.5. Navigation Bar 16
6.5.1. File 16
6.5.2. Setting 16
6.5.3. Help 17
7. Precautions 18
8. Questions & Answers 18

1. Introduction

The MSC-8 is a portable and full-featured MIDI stream controller. It features four high-speed USB 2.0 host ports, offering strong compatibility, fast transmission rates, and high stability. The MSC-8 also has four MIDI 5-pin ports, which can be configured as MIDI input/output ports, suitable for various MIDI applications. The MSC-8 supports MIDI filtering, MIDI mapping, and MIDI routing, and can work independently of a computer after configuration, providing flexible handling of MIDI message transmission. Furthermore, the MSC-8's USB DEVICE port can be connected to a computer and used as a USB MIDI hub to transmit MIDI messages from both the MIDI 5-pin ports and the USB host ports.

2. Appearance



Name	Description
❶DC IN	The product's power supply port supports 9~12VDC power. Specifications: Ring diameter 5.5*Tip diameter 2.1mm, supports tip positive and ring negative, and tip negative and ring positive. It features a power indicator light, which illuminates when the product is powered on.

❷USB DEVICE	The USB-C port features standard MIDI functionality, allowing connection to a computer for MIDI transfer. Connecting to a computer also enables configuration of MIDI filtering, MIDI mapping, and MIDI routing. A connection indicator light illuminates when connected to a computer.
❸USB HOST 1~4	4 High-speed USB 2.0 host ports, connects to USB MIDI devices (To HOST) via USB-A connector.
❹MIDI IN/OUT 1~4	Five-pin MIDI input/output port, which can be set to MIDI input or MIDI output. Green light on: Indicates it is set to MIDI input. Red light on: Indicates it is set to MIDI output.
❺SW1~SW4	MIDI IN/OUT1 port transmission direction switch button: Click to switch MIDI transmission direction.

3. Parameters

Name	Description
Model	MSC-8
Size (L x W x H)	115*73*33mm
Weight	220g
Power Consumption	71mA@9V，50mA@12V，90mA@5V(Powered via USB-C)
USB HOST Speed	480Mbps（60MB/s）
USB HOST Version	Standard high-speed USB MIDI HOST interface (USB2.0)
USB HOST Compatibility	Compatible with all USB MIDI devices USB2.0/USB1.0/USB1.1
USB HOST Power Output	It can provide a maximum power supply of 5V/2A, and the power supply of the DC port needs to have a power of 10W or more.
USB Device Version	USB 1.1 device, standard USB MIDI device, plug and play when connected to a computer.
MIDI Interface	High-performance FTP processing with one input and one output 16-channel MIDI interface, Built-in high-speed Isolator
MIDI Compatibility	Compatible with all musical instruments with MIDI standard interface
Firmware Upgrade	Support firmware upgrade

4. Steps for usage

4.1. Power supply

Power Supply	Description
Powered by DC port	a. 9V DC power supply: Use a 9V/0.5A power supply. b. 12V DC power supply: Use a 12V/0.5A power supply. c. If you need to power other USB MIDI devices via the USB HOST port, please ensure that the DC power supply has sufficient power to meet the operating requirements of these USB MIDI devices.
Powered by USB Device port	The MSC-8 can also be powered via the USB DEVICE port. Note: Computer's USB port typically provides 5V/0.5A of power. If powering the product through a USB hub, please ensure sufficient power.

4.2. Connect a USB MIDI instrument

Connect a USB MIDI instrument via the USB-A port of "USB HOST". Once the connection is successful, the indicator light of "USB HOST" will light up.

4.3. Connect MIDI 5-pin device

a. To set the data direction of the MIDI port, click the SW1/2 button and set the MIDI DIN port as input/output.

b. Connect the MIDI IN to the instrument's MIDI output and the MIDI OUT to the instrument's MIDI input.

c. When all MIDI messages are outputting/inputting to the corresponding port, the indicator light on the MIDI port will flash.

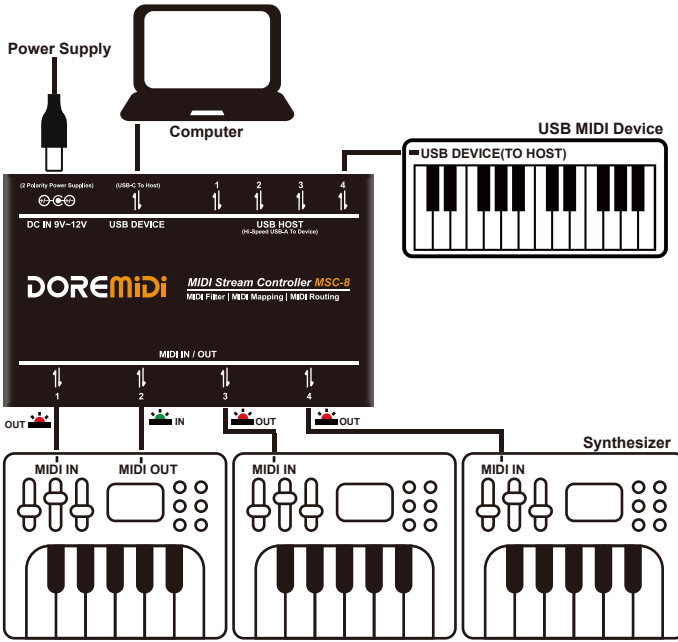
4.4. Connect to computer

After connecting the MSC-8 to a computer, you can configure MIDI port routing, filtering, and mapping. See Section "**6.Configuring MIDI Filtering/Routing/Mapping**" for details. Additionally, the MSC-8 can be used as a MIDI hub after connection, allowing the computer's MIDI software to communicate with devices connected to the USB HOST port or MIDI 5-pin port. The MSC-8 has 8 input ports and three MIDI output ports, users can select the desired MIDI port in the MIDI software. The mapping between the computer's MIDI ports and the MSC-8's MIDI ports is as follows:

MIDI Input/Output	MIDI Port Names	MSC-8 Ports
MIDI Inputs	DOREMiDi MSC-8	MIDI IN1
	MIDIIN2 (DOREMiDi MSC-8)	MIDI IN2
	MIDIIN3 (DOREMiDi MSC-8)	MIDI IN3
	MIDIIN4 (DOREMiDi MSC-8)	MIDI IN4
	MIDIIN5 (DOREMiDi MSC-8)	USB HOST1
	MIDIIN6 (DOREMiDi MSC-8)	USB HOST2
	MIDIIN7 (DOREMiDi MSC-8)	USB HOST3
	MIDIIN8 (DOREMiDi MSC-8)	USB HOST4
MIDI Outputs	DOREMiDi MSC-8	MIDI OUT1
	MIDIOUT2 (DOREMiDi MSC-8)	MIDI OUT2
	MIDIOUT3 (DOREMiDi MSC-8)	MIDI OUT3
	MIDIOUT4 (DOREMiDi MSC-8)	MIDI OUT4
	MIDIOUT5 (DOREMiDi MSC-8)	USB HOST1
	MIDIOUT6 (DOREMiDi MSC-8)	USB HOST2
	MIDIOUT7 (DOREMiDi MSC-8)	USB HOST3
	MIDIOUT8 (DOREMiDi MSC-8)	USB HOST4

(Note: If you use "MIDI Stream Config" to set up MIDI routing, please do not repeat the routing in other software, otherwise it may cause MIDI data looping.)

5. Connection diagram



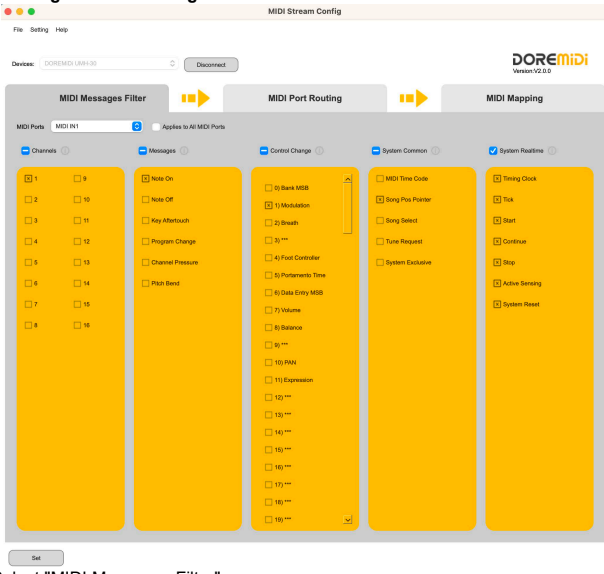
6. Configure MIDI Filter/Routing/Mapping

After connecting the MSC-8 to a computer via USB device port, users can use the "MIDI Stream Config" software to configure MIDI filtering, routing, and mapping for each MIDI port. The "MIDI Stream Config" software can be downloaded from www.doremidi.cn. The software is compatible with Windows 7 and later, macOS V13.0 and later. The MSC-8 also features non-volatile memory, saving settings and allowing for independent use without a computer.

6.1. Connect the device

Connect the MSC-8 to the computer via “USB DEVICE” port, select MSC-8, and click "Connect" to complete the connection. After connection, the software will automatically retrieve the MSC-8's settings parameters.

6.2. Configure MIDI Message Filter



a. Select "MIDI Messages Filter".

b. In “MIDI Ports”, select the MIDI port that needs to be filtered, select “Applies to All MIDI Ports” to apply the filter to all MIDI ports.

c. Select the content you want to filter. Select "×" to filter that MIDI message. Please refer to the following:

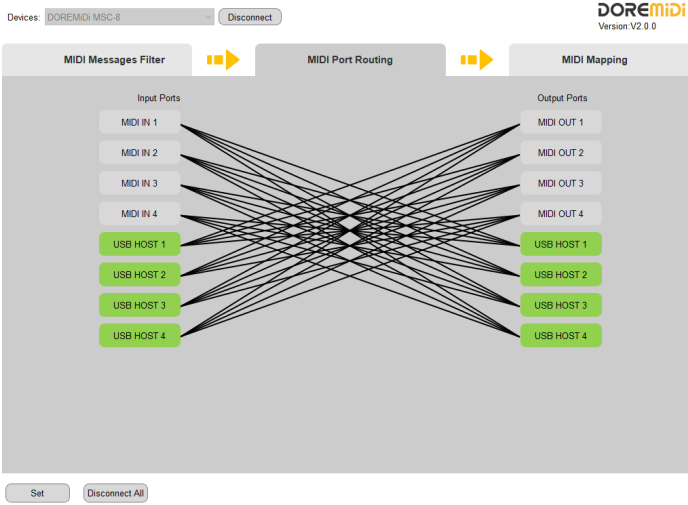
Filter Type	Description
Channels	MIDI channel, filter all messages of this MIDI channel.
Messages	MIDI message type, filter MIDI messages of this type in all MIDI channels.
Control Change	MIDI CC controller, filter the messages of this CC controller in all MIDI channels.
System Common	MIDI system messages, filter MIDI messages of this type.
System Realtime	MIDI system real-time time message, will filter this type of MIDI message.

d. Set: After selecting the filter option, click "Set" to save the settings to the product.

6.3. Configure MIDI Port Routing

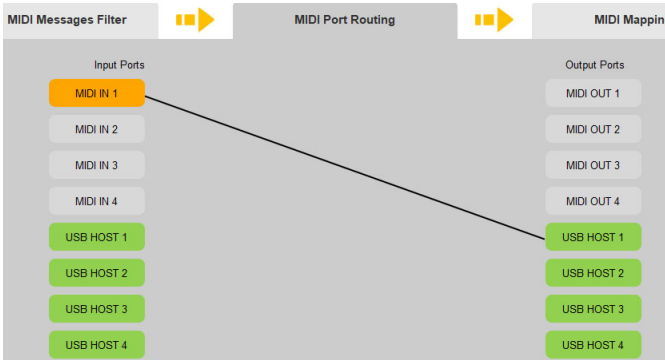
6.3.1. Factory Default MIDI Routing

Select "MIDI Port Routing" interface. The MSC-8's factory default routing is MIDI IN → USB HOST, USB HOST → MIDI OUT, as shown in the figure:



6.3.2. Routing Operations

e. Left-click to select the Input Ports, and then click the Output Ports on the right to complete the routing from MIDI input to MIDI output. Right-click the connection line to cancel the connection, or click "Disconnect All" to cancel all connections.



(Note: In the design of MSC-8, the MIDI input and output are integrated, so MIDI IN 1 cannot be routed to MIDI OUT1, and so on.)

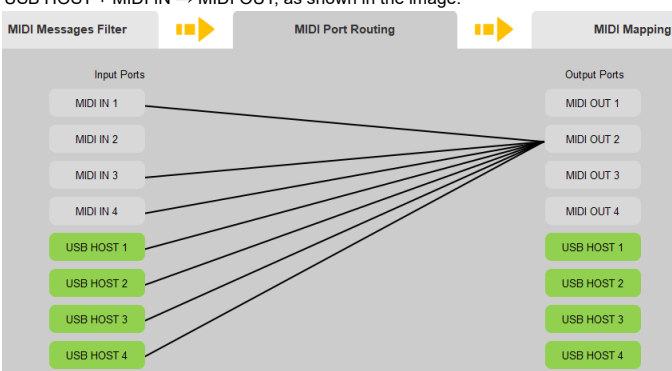
f. Set: After configuring the MIDI routing, click "Set" to save the settings to the product.

g. Disconnect All: Click “Disconnect All” will delete all route connections.

6.3.3. MIDI Routing Reference

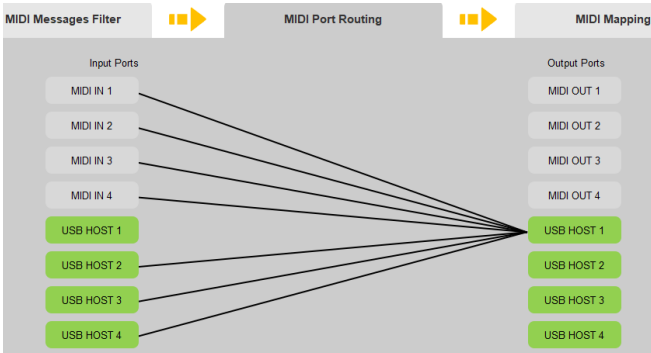
1) MIDI Merging 1

USB HOST + MIDI IN → MIDI OUT, as shown in the image:



2) MIDI Merging 2

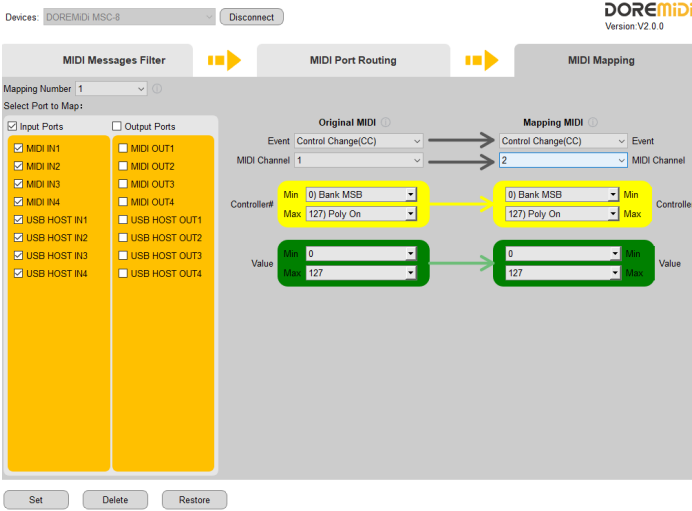
USB HOST+MIDI IN→MIDI OUT, MIDI IN→USB HOST, as shown in the image:



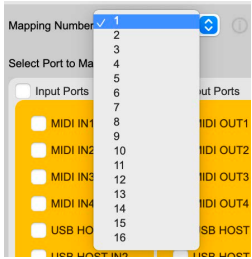
6.4. Configure MIDI Mapping

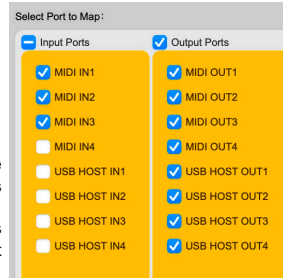
6.4.1. Interface Introduction

The MSC-8 supports mapping of all standard MIDI messages, including MIDI Note, Control Change (CC), Program Change (PC), System Exclusive, etc., and can store up to 16 MIDI mapping rules.



a. Mapping Number: The MSC-8 has a total of 16 mapping numbers. Each mapping number can store one MIDI mapping rule.



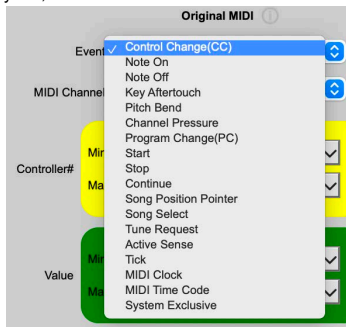


b. Select Port to Map: Select the MIDI port to be mapped, supporting mapping of MIDI input ports and MIDI output ports.

c. Original MIDI: The original MIDI message refers to the message after MIDI filtering and MIDI port routing.

d. Mapping MIDI: Mapped MIDI messages. The original MIDI messages will be converted into mapped MIDI messages according to this rule.

e. Event: MIDI mapping events, supporting mapping of all MIDI events, including Note/CC/PC, and SysEx, etc.



f. MIDI Channel: There are a total of 16 MIDI channels, 1~16 corresponding to MIDI communication protocols 0~15.

g. Set: After setting up the MIDI mapping, click "Set" to save the settings to the product.

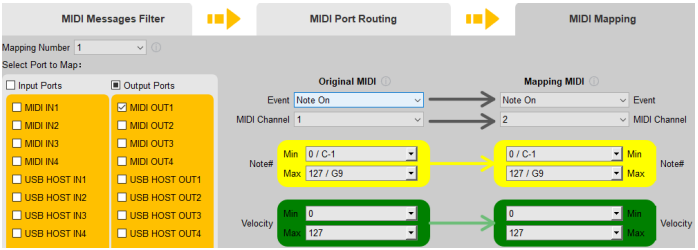
h. Delete: Deletes the mapping rule for the current mapping number.

i. Retore: Deletes all mapping rules for mapping numbers.

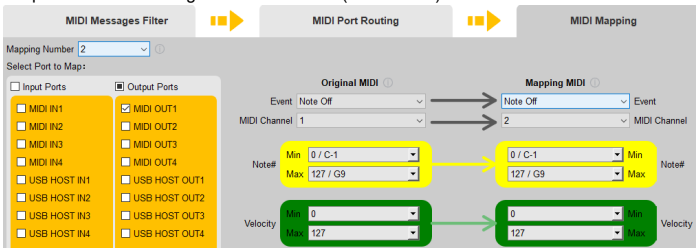
6.4.2. Typical Applications of Mapping

1) Changing the MIDI Note Channel

MIDI note consists of two MIDI messages: Note On and Note Off. Two mapping rules need to be established. Map the MIDI Note On message from MIDI channel 1 (MIDI OUT1) to MIDI channel 2:

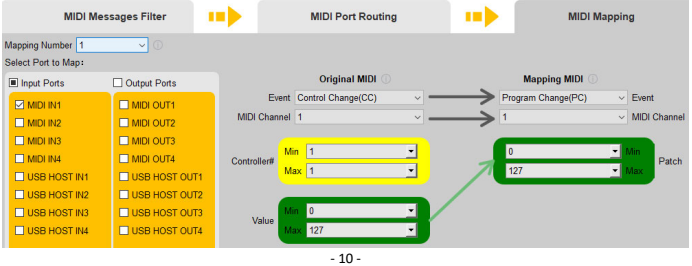


Map the Note Off setting of MIDI channel 1 (MIDI OUT1) to MIDI channel 2:



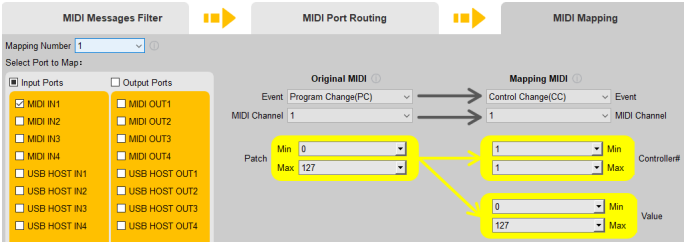
2) Convert CC to PC

This is typically used in MIDI guitar effects control. As shown in the image, it maps the value of CC#1 received from MIDI IN1 to the PC:



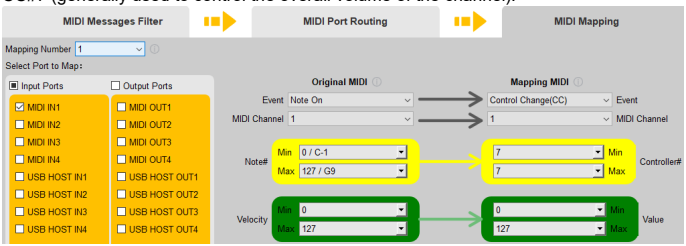
3) Convert PC to CC

As shown in the image, the PC value received from MIDI IN1 is mapped to the Value of CC#1:



4) Convert Note to CC

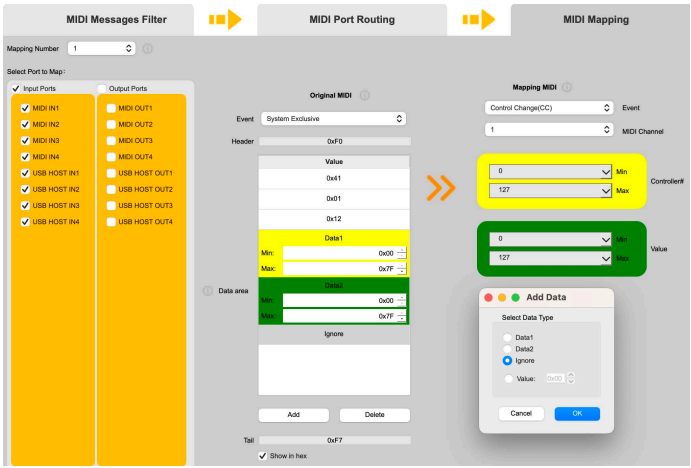
As shown in the image, the note velocity of MIDI channel 1 is mapped to the value of CC#7 (generally used to control the overall volume of the channel):



6.4.3. System Exclusive (or SysEx) Mapping

SysEx message mapping is a professional application, generally used to convert regular MIDI messages (PC/CC, etc.) to SysEx, or vice versa. We typically edit SysEx messages in hexadecimal (Hex).

1) Interface Introduction



a. Header: The beginning of the SysEx message data, always 0xF0 (Hex).

b. Tail: The end of the SysEx message data, always 0xF7 (Hex).

c. Data area: The data area. The MSC-8 supports a maximum of 28 data bytes, with a maximum value of 0x7F (Hex).

d. Add: Click "Add" to add data to the SysEx message.

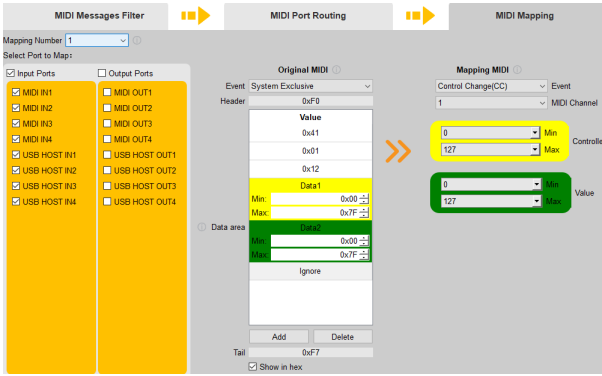
e. Delete: Click "Delete" to delete an added SysEx message.

f. Data1 and Data2: SysEx supports mapping two data items, Data1 and Data2, using the same color. As shown in the diagram above, Data1 is mapped to the CC controller number (Controller#) of MIDI channel 1, Data2 is mapped to the CC value (Value).

g. Value: A valid fixed value. The product will only perform MIDI mapping conversion upon receiving this value.

h. Ignore: Adds data that can be ignored. This data only occupies one position, but the MSC-8 will not detect it. For example, some products use the last data as the check digit. Since the check digit changes randomly, we can set it to "Ignore" to ignore this data.

2) SysEx Mapping to CC



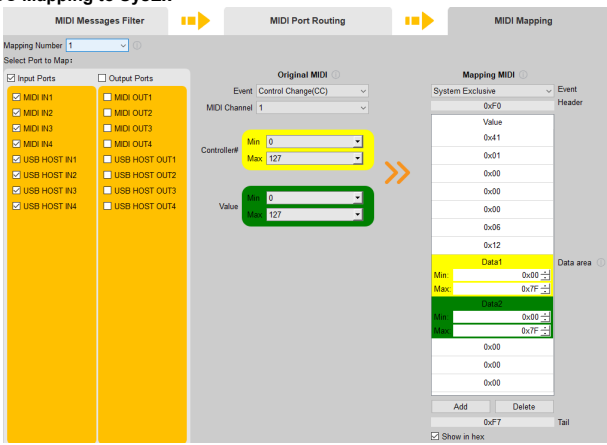
As shown in the image, mapping SysEx's Data1 and Data2 to MIDI channel 1's CC will result in the following mapping rules:

MIDI IN receiving "F0 41 01 12 01 02 7F F7 (Hex)", will be converted to "B0 01 02 (Hex)",

MIDI IN receiving "F0 41 01 12 12 34 60 F7 (Hex)", will be converted to "B0 12 34 (Hex)".

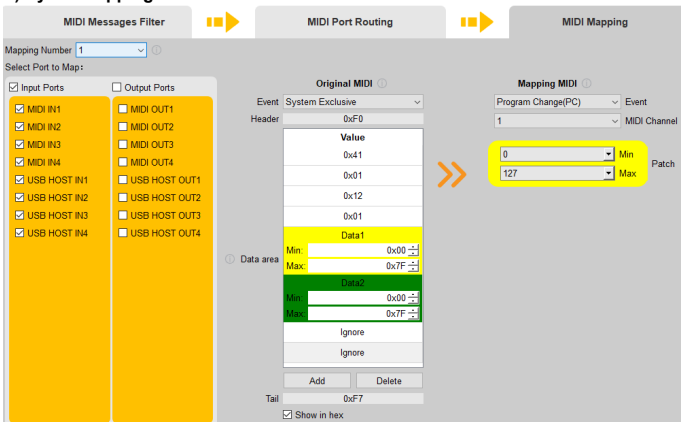
(Note: In "B0 01 02", "B" represents the CC controller event, and "0" represents MIDI channel 1.)

3) CC Mapping to SysEx



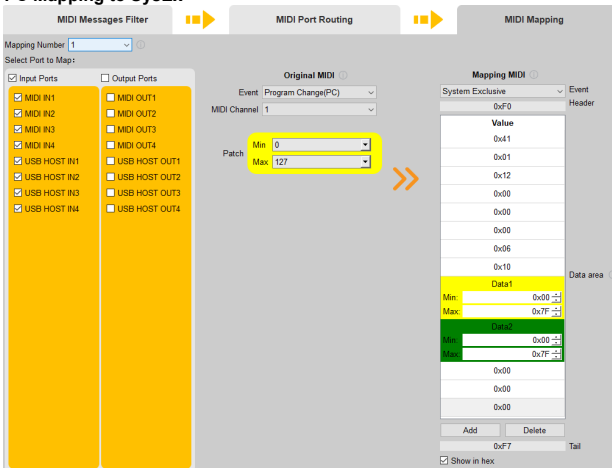
As shown in the image, the CC message of MIDI channel 1 is mapped to the Data1 and Data2 of the SysEx message. After setting this, the following mapping rules will apply:
MIDI IN receiving "B0 01 01 (Hex)" will be converted to "F0 41 01 12 00 00 00 06 12 01 01 00 00 00 F7 (Hex)"
MIDI IN receiving "B0 12 34 (Hex)" will be converted to "F0 41 01 12 00 00 00 06 12 12 34 00 00 00 F7 (Hex)"

4) SysEx Mapping to PC



As shown in the figure, mapping SysEx Data1 and Data2 to MIDI channel 1's CC will have the following mapping rules:
MIDI IN1 receiving "F0 41 01 12 01 12 7F F7 (Hex)" will be converted to "C0 01 (Hex)".
MIDI IN1 receiving "F0 41 01 12 12 13 60 F7 (Hex)" will be converted to "C0 12 (Hex)".
(Note: In "C0 01", "C" represents the PC controller event, and "0" represents MIDI channel 1.)

5) PC Mapping to SysEx

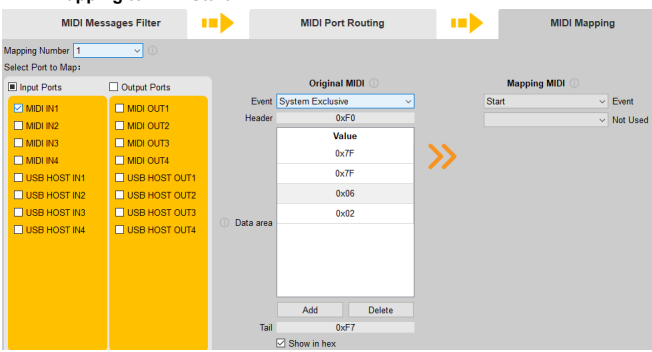


As shown in the figure, mapping the PC message of MIDI channel 1 to the Data1 message of SysEx will have the following mapping rules after setting:

If the MIDI input receives "C0 12", it will be converted to "F0 41 01 12 00 00 00 06 10 12 00 00 00 F7 (Hex)"

If the MIDI input receives "C0 7F", it will be converted to "F0 41 01 12 00 00 00 06 10 7F 00 00 00 F7 (Hex)"

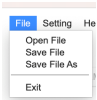
6) MMC Mapping to MIDI Start



MMC messages are also sent via SysEx format. As shown in the image, this SysEx is the Play command for MMC messages. Mapping this command to MIDI Start allows the MIDI Start message to play MIDI sequences. After setting this, the following mapping rules will apply: MIDI IN1 receiving "F0 7F 7F 06 02 F7(Hex)" will be converted to "FA(Hex)".

6.5. Navigation Bar

6.5.1. File



a. Save File: Saves all product configurations to a file for easy access next time. Saved configurations include all settings for MIDI message filtering, MIDI port routing, and MIDI mapping.

b. Save File As: Saves the file with a different name.

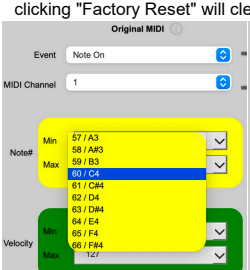
c. Open File: Opens a file used to import configuration parameters from other files.

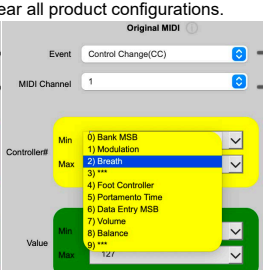
6.5.2. Setting

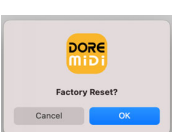
a. MIDI Note = 60 Name: MIDI note name setting. This sets the note name displayed when MIDI Note = 60.

b. Show CC Name: Sets the display name of the CC controller. When enabled, the CC controller name will be displayed when the pedal is set to Continuous Controller (CC). The CC controller name is defined according to the MIDI standard document, where "***" indicates an undefined name.

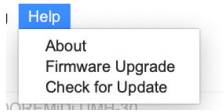
c. Factory Reset: Restores factory settings. After the software is connected to the product, clicking "Factory Reset" will clear all product configurations.







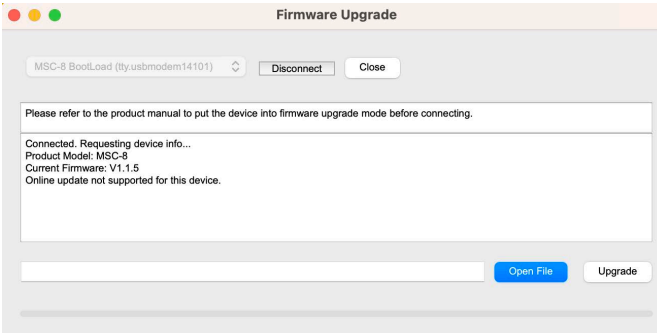
6.5.3. Help



a. About: Obtain information such as software version and website address.

b. Firmware Upgrade: Firmware upgrade. To upgrade your DOREMiDi product, enter upgrade mode, connect it to your computer, and use the software's firmware upgrade function.**(Note: ① For new firmware, please check the official website: www.doremidi.cn ② The upgrade mode may differ for different products; please refer to the product manual. ③ On a Windows PC, if the software cannot recognize the device, please install the USB driver (this driver is only for Windows systems: https://www.doremidi.club/download/Product/Upgrade/Virtual_COM_Port_Driver_V1.5.0.zip)**

c. Check for Update: Check if there is a newer version.



7. Precautions

1) This product contains a circuit board.
2) Rain or immersion in water will cause the product to malfunction.
3) Do not heat, press, or damage internal components.
4) Non-professional maintenance personnel shall not disassemble the product.
5) If the product is disassembled or damaged by improper use, the warranty is not available.

8. Questions & Answers

1. Question: Can the USB HOST interface power a USB MIDI instrument?
   Answer: Yes, it can, but you need to ensure that the power input of the "DC IN" port meets the operating requirements of the USB MIDI instrument.
2. Question: The USB HOST interface is not working.
   Answer: Please follow these steps:
   a. Ensure the "DC IN" power indicator is on.
   b. Confirm that the instrument is working properly and that its USB interface has MIDI functionality (e.g., it can be recognized by a computer as a MIDI device).
   c. Try powering the product through "DC IN" first, then connecting it to the instrument through "USB HOST" to see if the "USB HOST" indicator light illuminates.
   d. If the "USB HOST" indicator light still does not illuminate, or if it illuminates but cannot transmit MIDI messages, please contact customer service for assistance.
3. Question: The MIDI OUT/IN interface is not working.
   Answer: Please follow these steps:
   a. Ensure the product's "MIDI OUT" is connected to the instrument's "MIDI IN," and the product's "MIDI IN" is connected to the instrument's "MIDI OUT".
   b. The MIDI interface indicator light will flash when all MIDI messages are output/input at the corresponding interface.
   c. If the MIDI interface indicator light does not flash, please contact customer service.
4. Question: The USB HUB is unstable after connecting multiple devices.
   Answer: Please follow these steps:
   a. If powering the instrument through the USB HUB's USB port, please check if the power input of "DC IN" meets the operating requirements of the USB MIDI instrument.
   b. Please try providing additional power to the USB HUB.

Manufacturer: Shenzhen Huashi Technology Co., Ltd.
Address: Room 910, 9th Floor, Jiayu Building, Songgang Street, Baoan District, Shenzhen, Guangdong, China
Post Code: 518104
Customer Service Email: info@doremidi.cn