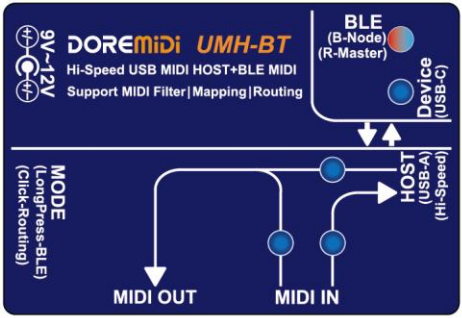
DOREMiDi
www.doremidi.cn

UMH-BT

Hi-Speed USB MIDI HOST + BLE MIDI Instruction

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



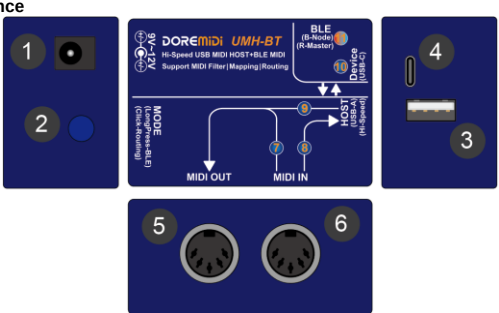
1. Introduction 1
2. Appearance 1
3. Parameters 2
4.Steps for usage 3
4.1. Power supply 3
4.2. Connect a USB MIDI instrument 3
4.3. Connect MIDI 5-pin device 3
4.4. Connect to computer 3
5.Connection diagram 4
6.Configure MIDI Filter/Mapping 5
6.1. Connect the device 5
6.2. Configure MIDI Message Filter 5
6.3. Configure MIDI Mapping 6
6.4.1. Interface Introduction 6
6.4.2. Typical Applications of Mapping 8
1) Changing the MIDI Note Channel 8
2) Convert CC to PC 8
3) Convert PC to CC 9
4) Convert Note to CC 9
6.4.3. System Exclusive (or SysEx) Mapping 10
1) Interface Introduction 10
2) SysEx Mapping to CC 11
3) CC Mapping to SysEx 11
4) SysEx Mapping to PC 12
5) PC Mapping to SysEx 13
6) MMC Mapping to MIDI Start 13
6.4. Navigation Bar 14
6.5.1. File 14
6.5.2. Setting 14
6.5.3. Help 15
7.App Usage 16
7.1. Firmware Upgrade 16
7.2. Change Bluetooth Name 16

8. Precautions 17
9. Questions & Answers 17

1. Introduction

The Hi-speed USB MIDI HOST BT (UMH-BT) is a portable Bluetooth USB MIDI host designed by DOREMiDi. In addition to its USB MIDI host functionality, the UMH-BT also features BLE MIDI function, supporting connections to mobile phones, computers, and DOREMiDi Bluetooth MIDI slave devices. The UMH-BT has a high-speed USB 2.0 host port, characterized by strong compatibility, fast transmission speed, and high stability. It has standard MIDI 5-pin DIN input and output ports for connecting MIDI DIN devices. Furthermore, the UMH-BT has a USB-C port, allowing connection to a computer to transfer MIDI messages from the MIDI 5-pin port and the USB host. It also allows for MIDI filtering and MIDI mapping settings, enabling independent use without a computer after configuration. The product also includes a mode button for quick MIDI routing.

2. Appearance



Name	Description
❶DC IN	Power supply port, supports 9~12VDC. Specifications: 5.5*2.1mm. Support inner positive / negative, and outer negative / positive.
❷MODE	Mode selection button, when clicked, sets the MIDI route, Long press to switch BLE MIDI modes.
❸ HOST	High-speed USB 2.0 host interface, for connecting devices with USB MIDI (To HOST) or USB hubs (up to 8 USB ports).
❹USB-C Device	USB-C device port with standard USB MIDI functionality, usable for connecting to a computer. Connecting to a computer can also be used to configure the product's MIDI filtering and MIDI mapping. MIDI signal direction on the USB Device port: **MIDI IN + USB HOST → USB Device** **USB Device → MIDI OUT + USB HOST**
❺MIDI OUT	5-pin MIDI output port, for connecting to the MIDI input of an external MIDI device.
❻ MIDI IN	5-pin MIDI input port, for connecting to the MIDI output of an external MIDI device.

⑦MIDI Output Indicator	The indicator light is on when the MIDI transmission direction is set to MIDI IN→MIDI OUT. It flashes when MIDI IN → MIDI OUT has a MIDI signal. It flashes when Device → MIDI OUT has a MIDI signal. It flashes when BLE MIDI → MIDI OUT has a MIDI signal.
⑧HOST Output Indicator	The indicator light is on when the MIDI signal direction is set to MIDI IN→HOST. It flashes when MIDI IN→HOST has a MIDI signal. It flashes when Device→HOST has a MIDI signal. It flashes when MIDI→HOST has a MIDI signal.
⑨HOST Connection and Input Indicator	The indicator light is on when a USB MIDI device is connected to the USB HOST. It flashes when USB HOST→MIDI OUT has a MIDI signal.
⑩USB-C Device Indicator	The indicator light is on when the UMH-BT is connected to a computer. The indicator light flashes when the USB Device is transmitting a MIDI signal.
⑪BLE MIDI Indicator	The indicator light flashes when Bluetooth MIDI is not connected, it remains on when Bluetooth MIDI is successfully connected. Blue light: Node mode, used to connect to host terminal devices such as mobile phones and computers. Red light: Master mode, used to connect to DOREMiDi Bluetooth MIDI node devices. Off light: Bluetooth MIDI is off. Bluetooth MIDI signal direction: MIDI IN + USB HOST → Bluetooth MIDI Bluetooth MIDI → MIDI OUT + USB HOST

3.Parameters

Name	Description
Model	UMH-BT
Size (L x W x H)	66*46*32mm
Weight	55g
Power Consumption	20mA@9V，13mA@12V，25mA@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, 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 UMH-BT 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. Connect the MIDI IN to the instrument's MIDI output and the MIDI OUT to the instrument's MIDI input.

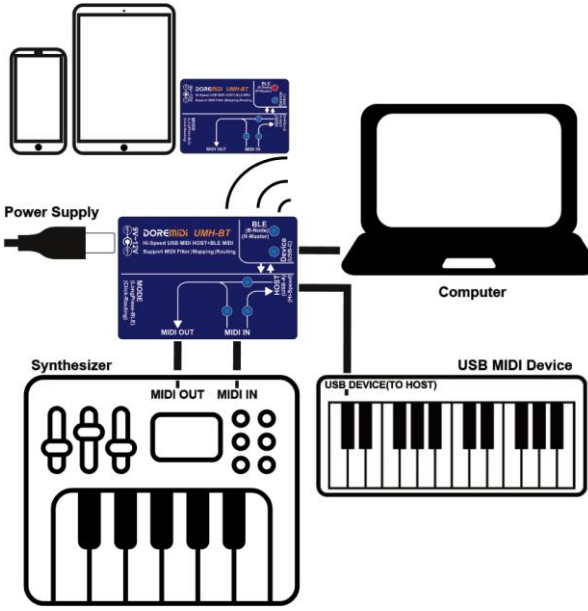
b. When all MIDI messages are outputting/inputting to the corresponding port, the indicator light on the MIDI port will flash.

4.4. Connect to computer

After connecting the UMH-BT to a computer, you can configure MIDI port filtering, and mapping. See Section "**6.Configuring MIDI Filtering/Mapping**" for details. In addition, after connecting the UMH-BT to a computer, it can communicate with devices connected to the USB HOST port or MIDI 5-pin port using DAW MIDI software. The UMH-BT has two input ports and two MIDI output ports, and users can select the desired MIDI port in the MIDI software. The mapping between the computer's MIDI port and the UMH-BT's MIDI port is as follows:

MIDI Input/Output	MIDI Port Names	UMH-BT Ports
MIDI Inputs	DOREMiDi UMH-BT	MIDI IN
	MIDIIN2 (DOREMiDi UMH-BT)	USB HOST
MIDI Outputs	DOREMiDi UMH-BT	MIDI OUT
	MIDIOUT2 (DOREMiDi UMH-BT)	USB HOST

5.Connection diagram



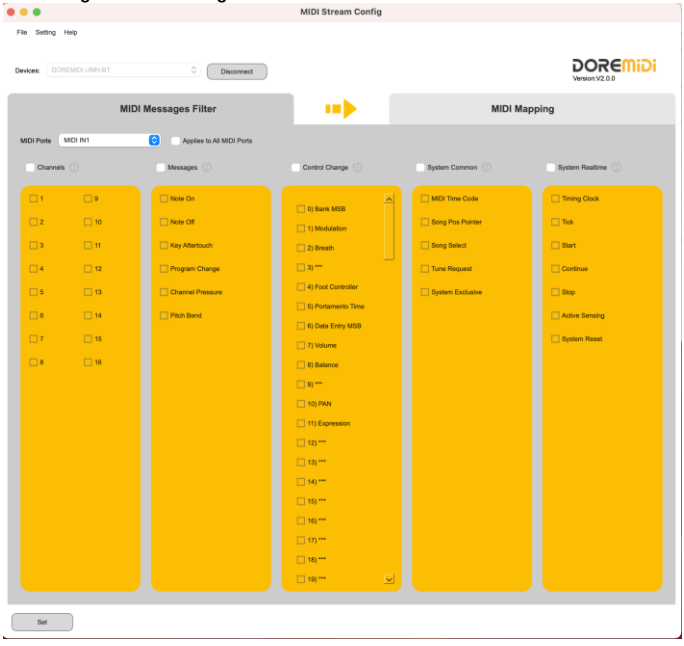
6.Configure MIDI Filter/Mapping

After connecting the UMH-BT to a computer via USB device port, users can use the "MIDI Stream Config" software to configure MIDI filtering 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 UMH-BT also features non-volatile memory, saving settings and allowing for independent use without a computer.

6.1. Connect the device

Connect the UMH-BT to the computer via “USB DEVICE” port, select UMH-BT, and click "Connect" to complete the connection. After connection, the software will automatically retrieve the UMH-BT'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:

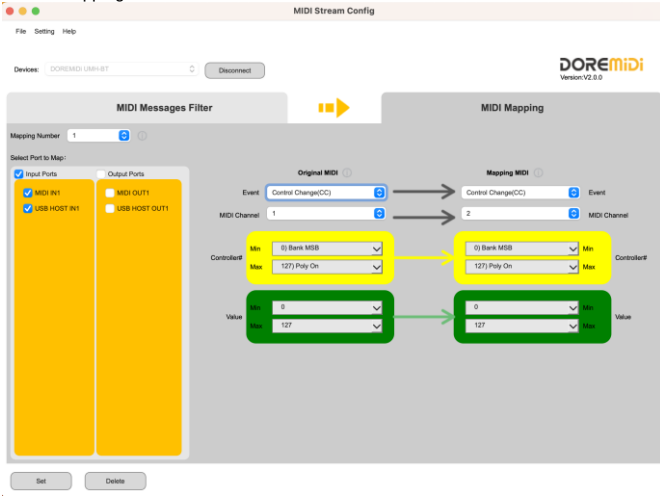
Filter Type	Description
Channels	MIDI channel, filter all messages of this MIDI channel.
Messages	MIDI message type, filter MIDI messages of this type in all MIDI channels.
Control Change	MIDI CC controller, filter the messages of this CC controller in all MIDI channels.
System Common	MIDI system messages,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

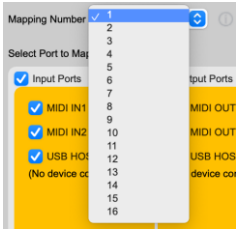
6.3. Configure MIDI Mapping

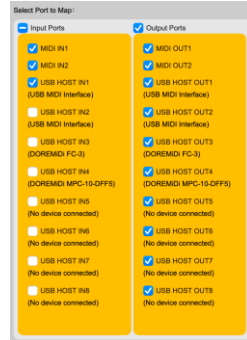
6.4.1. Interface Introduction

The UMH-BT 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 UMH-BT 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, you need to click "Set" to save the settings to the product.

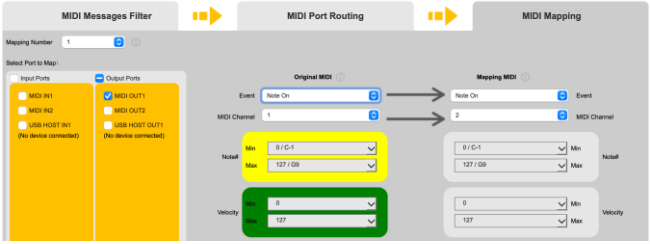
h. Delete: Deletes the mapping rule for the current mapping number.

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

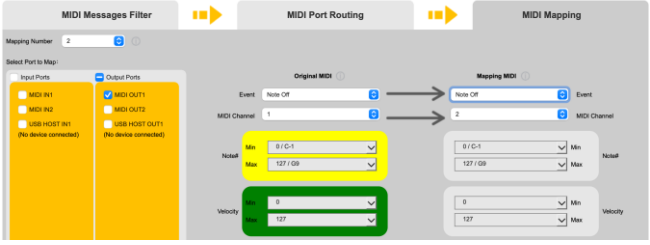
6.4.2. Typical Applications of Mapping

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:

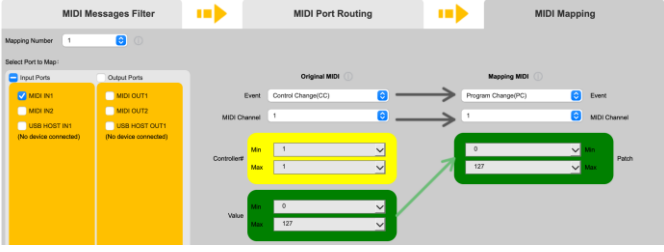


Map the Note Off setting of MIDI channel 1 (MIDI OUT1) to MIDI channel 2:



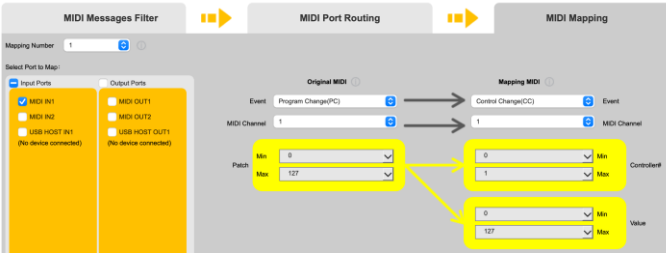
2) Convert CC to PC

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:



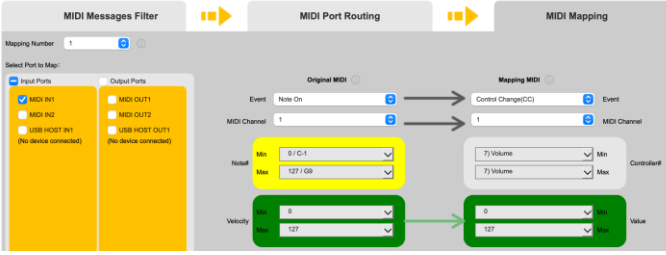
3) Convert PC to CC

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

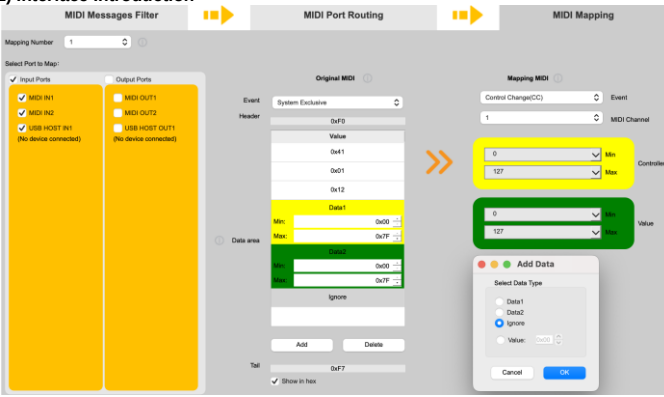
As shown in the image, the note velocity of MIDI channel 1 is mapped to the value of CC#7 (generally used to control the overall volume of the channel):



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 UMH-BT 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.

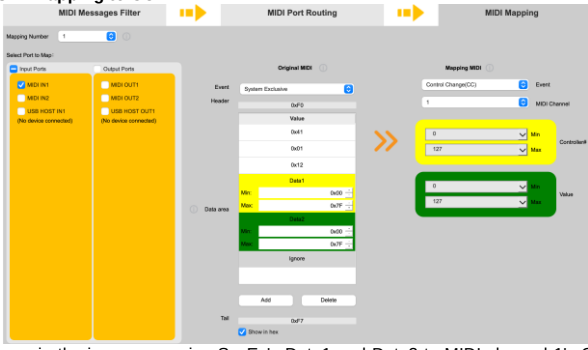
e. Delete: Click "Delete" to delete an added SysEx message.

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 UMH-BT 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

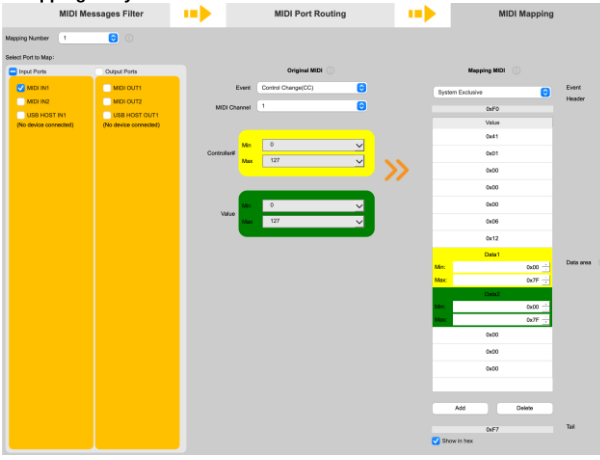


As shown in the image, mapping SysEx's Data1 and Data2 to MIDI channel 1's CC will result in the following mapping rules:

If the MIDI input receives "F0 41 01 12 01 02 7F F7 (Hex)", it will be converted to "B0 01 02 (Hex)"; If the MIDI input receives "F0 41 01 12 12 34 60 F7 (Hex)", it 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

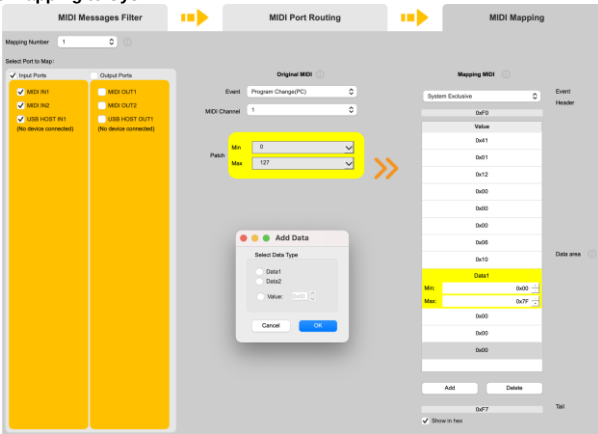


As shown in the image, the CC message of MIDI channel 1 is mapped to the Data1 and Data2 of the SysEx message. After setting this, the following mapping rules will apply:
MIDI IN1 receiving "B0 01 01 (Hex)" will be converted to "F0 41 01 12 00 00 00 06 12 01 01 00 00 00 F7 (Hex)"
MIDI IN1 receiving "B0 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

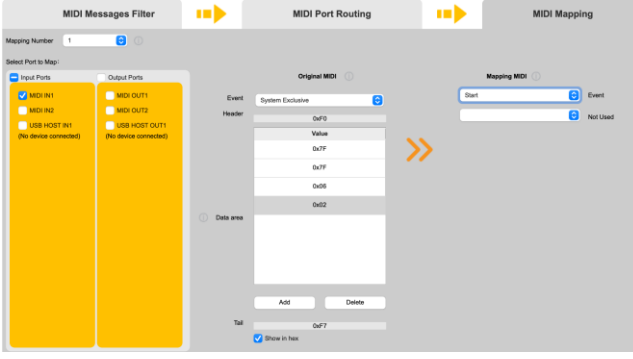


As shown in the figure, mapping the PC message of MIDI channel 1 to the Data1 message of SysEx will have the following mapping rules after setting:

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)"

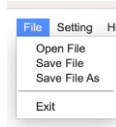
6) MMC Mapping to MIDI Start



MMC messages are also sent via SysEx format. As shown in the figure, 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)".

6.4. 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.

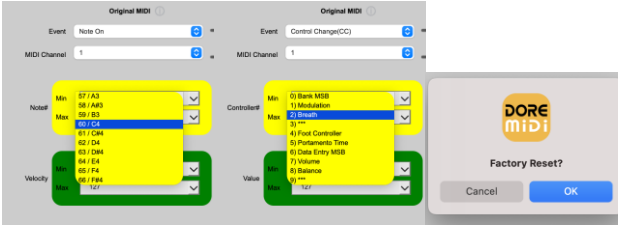
c. Open File: Opens a file used to import configuration parameters from other files.

6.5.2. Setting

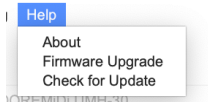
a. MIDI Note = 60 Name: MIDI note name setting. This sets the note name displayed when MIDI Note = 60.

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.



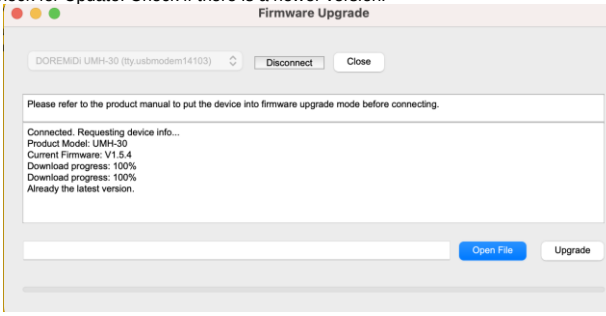
6.5.3. Help



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

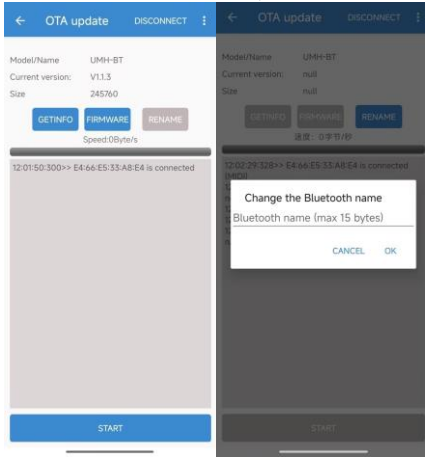
b. Firmware Upgrade: Firmware upgrade. To upgrade your DOREMiDi product, enter upgrade mode, connect it to your computer, and use the software's firmware upgrade function.**(Note: ① For new firmware, please check the official website: www.doremidi.cn ② The upgrade mode may differ for different products; 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.App Usage

The UMH-BT can be upgraded using the "DOREMiDi OTA" app, which allows for firmware upgrades and Bluetooth name changes. The app can be downloaded from the official website: www.doremidi.cn. For the iOS version, please search for "DOREMiDi OTA" in the App Store. After Bluetooth connection, the interface will look like this:



7.1. Firmware Upgrade

1) Enter Firmware Upgrade Mode: Press and hold the "Mode" button on the product, then power on the product, and release the Mode button. The UMH-BT will enter firmware upgrade mode.

2) GETINFO: Obtain device information, including device version and name.

3) FIRMWARE: Click to obtain the firmware file. After clicking, the app will download the firmware file via the network. This takes some time; please ensure your mobile network is stable.

4) START: Select the firmware file "***.hex" and click "START" to begin the firmware upgrade. During the upgrade process, please keep the product powered and connected stably, and keep your mobile phone as close to the product as possible. The product will restart after the upgrade is complete.

7.2. Change Bluetooth Name

RENAME: Change the Bluetooth name. Maximum 15 characters; Chinese characters are not supported. After changing the name, you need to disconnect and reconnect Bluetooth for it to be displayed.

(Note: The UMH-BT needs to be in working mode to change the name. The UMH-BT's Bluetooth name has a unique suffix that cannot be changed.)

8.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.

9.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.

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FCC Warning

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any inte rference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interferenceto radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.