CONDUCϔIVE LABS

MRCC

880 User Guide

Contents

Welcome, and thank you for choosing Conductive Labs for your MIDI studio needs! We really appreciate it! If you would be so kind, tag your social media posts with #MRCC so we can find them. We would love to see how MRCC 880 improves your studio and makes it a better place to create. Share your stories, music and pictures on our forums in the "Show me what you got!" section.

Sincerely,
Steve and Darryl

Support for MRCC 880 is provided by Conductive Labs and our experienced users on the Conductive Labs forums. Please register on the forums for questions not answered in this guide or the MRCC User Manual. As part of forum registration, you will receive a verification email. If you do not receive it check your spam/junk folder, the verification emails sometimes end up there. If you experience any problem with registering on the forums, let us know using the contact page on our website and we'll get you set up. You can register on the forums at: https://conductivelabs.com/forum

You may also want to check the FAQs which answer common questions, provide usage tips, and other important details that are outside the scope of this manual.

Opt-in to our Newsletter at conductivelabs.com for new product announcements and product update news.

What's in the box

1. MRCC 880 MIDI Router
2. USB Type A to Type B cable, 2M
3. This Guide

Requirements

Power supply (not included): USB 5V DC, 80mA. Virtually any USB 2.0 or greater host port or quality phone charger will be sufficient.

Operating Requirements:

Works with USB hosts that support USB MIDI class compliant devices (no driver required); including Conductive Labs MRCC, Microsoft Windows 10 and 11 PCs, MacOS, iPad, and iPhone, most Android tablets and phones, and Linux too.

Software such as a Digital Audio Workstation (DAW) is required to send MIDI data from your PC to the MRCC 880.

Specifications

The MRCC may be used as a 4x4 standalone MIDI router or can be used with a PC/MAC or other USB Host device for 8x8 routable ports.

- Four 5 pin DIN inputs. One shared 3.5MM TRS MIDI Type A jack, choose 5 pin DIN 1 or A jack but not both.
- Four 5 pin DIN outputs, with 3.5MM TRS MIDI thru Type A jack. Both can be used at once , sharing the same routing.
- One USB 2.0 type B socket for connecting to your PC or USB power supply for a DAWless setup. Four USB MIDI virtual inputs and four outputs individually routable.
- Green LED indicators for Inputs and Blue indicators for Outputs.
- Save/Load 4x presets, plus Init and "working" presets.
- Dedicated buttons for Save/Load presets, MIDI Panic, Channel Splitter, Clock Filter, Start/Stop/Continue Filter, MIDI monitor mode, and dedicated power switch and recessed firmware update button.
- Automatic MIDI merging when different inputs are routed to a common output.

Precautions, not limited to:

1. Read and follow all instructions.

2. Unplug before cleaning and use only a soft dry cloth. Do not use any cleaners, it could damage the silkscreen ink.

3. Do not use the instrument near water or moisture, such as a bathtub, sink, swimming pool or similar place.

4. Do not expose the instrument to hot sunlight.

5. Do not spill any kind of liquid onto the instrument.

6. Do not place the instrument in an unstable position where it might accidentally fall. Do not place heavy objects on the instrument.

7. Do not open or insert anything into the instrument that may cause a fire or electrical shock.

8. Always contact Conductive Labs LLC if you have an issue. **You will invalidate your warranty if you open and remove the cover unless instructed to do so by Conductive Labs.**

9. Do not use the instrument when there is a gas leak nearby.

10. Conductive Labs LLC is not responsible for any damage or data loss caused by improper operation of the instrument.

Not following the above Precautions will void the manufacturer's warranty.

Getting Started

1. Connect the included USB cable between the MRCC 880 and your computer or USB power supply (not included). Any quality USB charger should work.

2. Turn on the power switch and the LEDs will light briefly in sequence, then will light an Input when it's ready.

3. Connect MIDI input devices such as keyboards and sequencers to the MIDI DIN inputs.

   Note: the 3.5MM jacks labeled "A" are MIDI TRS standard inputs and outputs. You can choose one of the inputs (A or DIN 1). Do not connect more than one device to an Input with a shared jack.

4. Connect MIDI sound modules, such as synthesizers to the MIDI outputs.

   Note: You can use the A and DIN **Outputs** simultaneously, they will send the same MIDI data, so be aware of channel choices.

   Hint: Life will be rainbows and unicorns if your hardware MIDI controllers and sound modules are labeled with their assigned MIDI channels!

5. Set up your DAW (Digital Audio Workstation), if you use one. Each DAW will have different configuration steps best described by the vendor of the DAW. YouTube.com is a good resource for learning how to setup a MIDI interface with your specific system, MIDI interfaces mostly work the same. Check your DAW documentation for setting up MIDI tracks and virtual instruments, such as VSTs. For MacOS, use Audio MIDI Setup. See support.apple.com for details, there are different instructions for each version of MacOS selectable at the top of the page.

Overview of MRCC 880 Controls and Ports

MIDI DIN Ports

MIDI 3.5MM TRS Type A Port

Port Indicators (LEDs) Green = IN, Blue = OUT

MIDI IN Port Selectors

USB Type B Port for Power and MIDI Data

Save and Load Patches (h)

Power Switch

MIDI Panic (All Sound Off)

Channel Split (h)

Clock Filter (h)

Start/Stop/Continue Filter (h)

MIDI Monitor Mode

Firmware Update Button

MIDI OUT Port Selectors

(h) = Press and hold the button while selecting an input port to apply the filter to. MRCC 880 will blink the LEDs to indicate appropriate port choices.

Note: The MRCC provides 3.5MM MIDI TRS type "A" jacks as adopted by the MIDI Association. However, before the standard was adopted different manufacturers implemented MIDI on TRS jacks differently. The standard type "A" has DIN pin 5 on the Tip, pin 4 on the Ring and pin 2 on the Sleeve. A 3.5MM TRS adapter that swaps the Tip and Ring may be used for devices that implemented TRS type "B" with pin 4 on Tip and pin 5 on Ring.

Routing DIN Connections

Select a DIN input, its LED lights green. Then select which output(s) to route to. That's it!
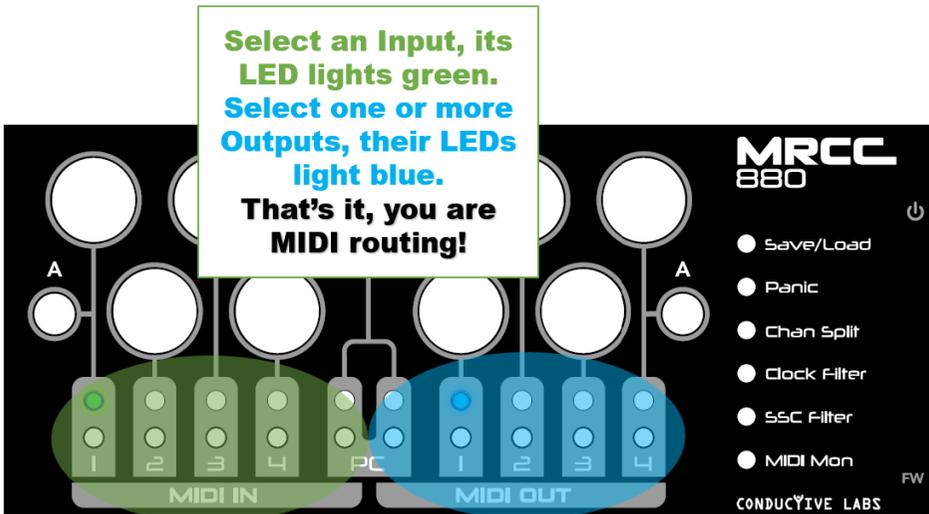

> Note: MIDI Merging is automatic when more than one input is routed to a common output, the MIDI data from the inputs will be merged to the common output.

Routing USB MIDI Virtual Inputs (from DAW to DIN)

1. Press and hold the PC Input button, the 4 Input LEDs will light dim green.
2. Select a virtual port, such as port 1, by selecting MIDI IN 1, it will light bright green.
3. Release the PC Input button. The PC Input LED will stay lit once a virtual Input has been selected.
4. Now select DIN Output(s) to route to.
5. In your DAW or MIDI application, select the USB MIDI virtual port "MRCC 880", which is Input 1 as selected above. MIDI sent from the DAW will route to the selected DIN Outputs.
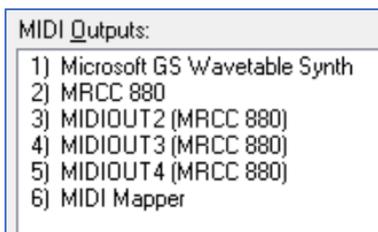
The USB MIDI Virtual Ports will look something like this (as seen in the popular MIDI OX MIDI monitoring utility for Windows):

8

MIDI Inputs:

```
1) MRCC 880
2) MIDIIN2 (MRCC 880)
3) MIDIIN3 (MRCC 880)
4) MIDIIN4 (MRCC 880)
```
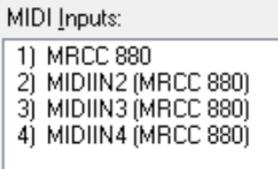
The way the ports are labeled can vary between operating systems and applications.

Routing DIN Inputs to USB Virtual Outputs (from DIN to DAW)

1. Select a DIN input, its LED lights green.
2. Press and hold the PC Output button, the 4 output LEDs light a dim blue.
3. Select an output, such as output 1 by selecting MIDI OUT 1. Its LED will light up bright blue.
4. In your DAW or MIDI application, receive MIDI from DIN 1 by selecting "MRCC 880", which is USB MIDI virtual port 1.

MIDI Outputs:

```
1) Microsoft GS Wavetable Synth
2) MRCC 880
3) MIDIOUT2 (MRCC 880)
4) MIDIOUT3 (MRCC 880)
5) MIDIOUT4 (MRCC 880)
6) MIDI Mapper
```

Now your application will receive MIDI sent on DIN input 1.
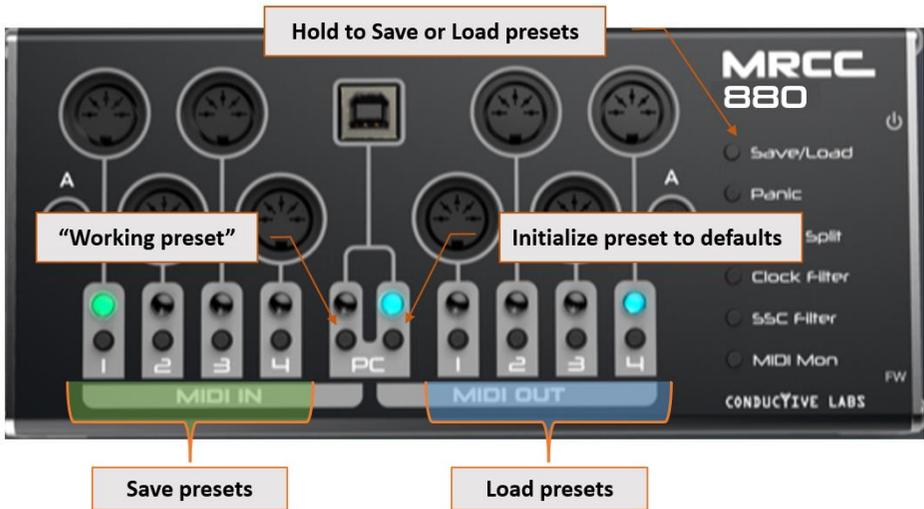
Check Your Routings

To see what routings have been made, press each DIN Input button in sequence and watch for blue LEDs to light to see if there are any Outputs routed.

Press and hold the PC Input button, then press each Input in sequence and watch to see if any blue Output LEDs are lighted.

Saving and Loading Presets

MRCC 880 can save four sets of routing and filter settings. The Save slots are stored by pressing and holding the Save/Load button, and selecting a MIDI IN button (1-4).

Labels on the figure:
- Hold to Save or Load presets
- Save/Load
- "Working preset"
- Initialize preset to defaults
- Save presets
- Load presets

To save your current settings to preset slot 1, press and hold the Save/Load button, then press and release MIDI IN button 1.

To recall a saved preset, press and hold the Save/Load button, and select the corresponding MIDI OUT button, for example MIDI OUT 1 to recall saved setting 1.

To re-initialize a save slot, that is to erase the saved settings, press and hold the Save/Load button, then press the PC out button (the one on the right with the blue LED). The current preset will be reset to factory defaults in memory. Save it to keep the factory settings.

It is also possible to make a "working preset" by saving using the PC input button. This is useful for making a temporary routing configuration without replacing one of the four saved presets. Save to this extra slot and it will be restored on the next power cycle, but it cannot be recalled once another preset slot is loaded.

Using the MIDI Panic Button
If you experience a stuck note on your synth, press the Panic button to send MIDI CC 120, "All Sound Off" to all outputs.

Using MIDI Channel Split Mode

The Chan Split feature is great for getting multiple tracks from a sequencer to more outputs without sending all of the MIDI channels to every port.

Hold the Chan Split button, then select an input and the channels will be split sequentially to the 4 DIN outputs.
For example, when Chan Split is applied to Input 1:
Output port 1 will send MIDI channels 1, 5, 9 and 13.
Output 2 channels 2, 6, 10, 14.
Output 3 channels 3, 7, 11, 15.
Output 4 channels 4, 8, 12, 16.

The outputs must be routed to send the split channels.

Using the Clock Filter

The Clock filter will filter MIDI clock messages on whichever inputs it is enabled. Typically, you want to avoid having more than once clock source. For the best MIDI performance, stopping the extra clock at the sending device is preferred because it's a lot of extra data for the MIDI router to process. However, if you need to block the clock on the MRCC 880 input, press and hold the Clock Filter button, then select an input to filter MIDI clock on that port.

For instance, let's say the clock you want to sync your MIDI devices to is coming into DIN input 1, and another "unwanted" clock is being received from PC input 1. Press and hold the Clock Filter button, press and hold the PC input button, then select MIDI virtual port 1 to apply the filter to that port.

Using the SSC (Start/Stop/Continue) Filter

The SSC filter will filter MIDI Start, Stop and Continue messages when applied to an Input. This is useful for preventing a built-in sequencer on your synthesizers from starting when pressing Start on an external sequencer.

To enable the SSC filter, press and hold the SSC Filter button, then select an input. Start/Stop/Continue messages will be filtered on that input.

Using the MIDI Monitor Mode

The MIDI Mon button toggles MIDI monitor mode. This will cause the LEDs to blink with MIDI data (an exception being System Exclusive messages), which can be useful for trouble-shooting where MIDI is being received.

Note: for MIDI clock messages, the MIDI monitor mode will blink at a slow rate so it is possible to see other MIDI activity.

The state of the MIDI Mon mode is not saved in presets. When MIDI Mon mode is on, pressing any routing button will turn it off. Toggle it back on when you are done setting up routings.

Using MRCC 880 as an MRCC MIDI Router Control Center Expansion

Note: we don't market the MRCC 880 as an expansion for MRCC because it's an overly complicated way to add ports compared to using one or more MRCC XpandR 4x1s. However, you might want those extra outputs, and it works just fine if you can manage the extra complexity. So here's an example of how to do it.

Routing from an MRCC 880 Input to MRCC USB host Input

1. Connect MRCC 880 to an MRCC USB Host port, it will light green when the MRCC 880 is attached and powered on.
2. On the MRCC, hold down the Input button for the USB port MRCC 880 is attached to, four MRCC output LEDs light green and white to indicate the 4 available MIDI virtual inputs. Select 1.
3. On the MRCC 880, route DIN input 1 to PC virtual output port 1. Do this by selecting DIN input 1 (its LED lights green), then press and hold the PC output button and select MIDI OUT 1 (for USB MIDI virtual port 1).
4. MRCC 880 DIN input 1 will now be received on MRCC on the USB host input you selected above, on virtual port 1.
5. With the MRCC USB host input button lit green, select the MRCC outputs you want to route to.
6. You can route up to 4 MRCC 880 ports to an MRCC USB host port.

**Routing from an MRCC USB host Output to MRCC 880**

>Note: You can route just 1 output from an MRCC USB host port.

1. On MRCC, select an Input to be routed to the MRCC 880.
2. Select the USB host output button for the port the MRCC 880 is attached to.
3. On the MRCC 880, press and hold the PC input button to select virtual port 1. This is the only port that will receive MIDI from the MRCC.
4. On MRCC 880, select the output(s) to route to.

Using More than One MRCC 880

If using more than one MRCC 880, or MRCC XpandR 4x1 and MRCC 880 on the same computer, it can be difficult to differentiate which ports belong to which device. MRCC 880 provides a feature to change the MRCC 880 device ID so that it has a unique identity to the operating system. To change the MRCC 880 device ID:

1. Power off MRCC 880. Then power on while holding the recessed FW button until the Input 4 LED lights (a couple of seconds).
2. Depending on your operating system, a window may open showing the contents of a virtual "disk drive". On Windows, it will look like this:
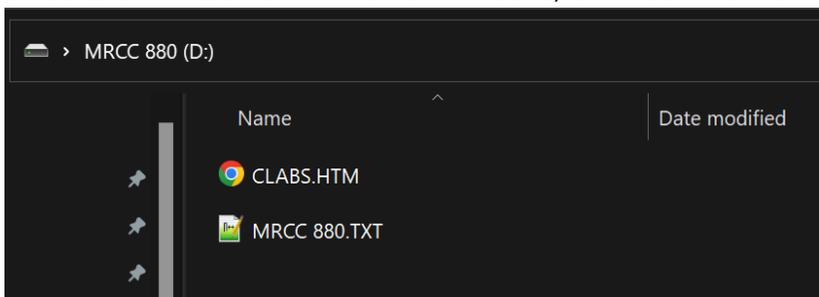
   For other operating systems, you may have to open the drive letter assigned to the MRCC 880.
3. Open MRCC 880.TXT with a plain-text editor, such as Notepad on Windows, or TextEdit on MacOS.

4. Edit the entry for the "Number" in first line (and nothing else), and replace it with a new value. Valid entries are; 1, 2, 3 or 4. For example: *Number "2"*
5. Save the file, then power cycle the MRCC 880.
6. You may need to uninstall MRCC 880 from your OS in order for it to see MRCC 880 as a new device with a unique ID. Check the FAQ on Conductivelabs.com for details.

MIDI System Exclusive (SysEx) Messages

MRCC 880 supports passing MIDI SysEx (System Exclusive) messages. SysEx data can be formatted in different ways, from very short messages used in MIDI Time Code (MTC), to very long messages such as a firmware update or patch dump.

Care must be taken when sending SysEx messages larger than 128 bytes while merging MRCC 880 inputs. When merging inputs, small SysEx messages, up to 128 bytes long will merge nicely with Realtime and other MIDI data, minimizing delay of Note On and Off messages. However, MRCC 880 will give priority to SysEx data exceeding 128 bytes, potentially blocking MIDI data on the other merged inputs.

Note: We recommend not sending any other MIDI data when doing a firmware update or other large SysEx transfer. If there are problems sending SysEx and it's difficult to stop other MIDI data on MRCC 880 inputs, try temporarily un-merging the output port to the device SysEx is being sent to. Do this by un-routing inputs other than the input SysEx is being sent from.

Note: Carefully follow the instructions provided by your MIDI hardware vendor when performing SysEx firmware updates. There are often technical details to be configured so their SysEx data is received correctly on the device, such as setting buffer sizes in the software used to send the data.

Firmware Updates

Conductive Labs periodically updates our product's firmware to fix reported issues or add features. Opt-in to our Newsletter at conductivelabs.com for product update news. If an update becomes available, instructions will be provided on the download page for the product.

Regulatory Compliance

EU Declaration of Conformity available at:
https://conductivelabs.com/download

Conductive Labs products are tested by a 3rd party lab and are certified to comply with applicable EU and CE directives.

EU REACH Compliance Report available upon request from authorized entities.

WEEE Statement

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment.

Conductive Labs products are WEEE registered via authorized resellers in their respective regions.

FCC Compliance Statement

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 interference received, including interference that may cause undesired operation.

Conductive Labs LLC, a corporation registered in the State of Oregon, United Sates of America.

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