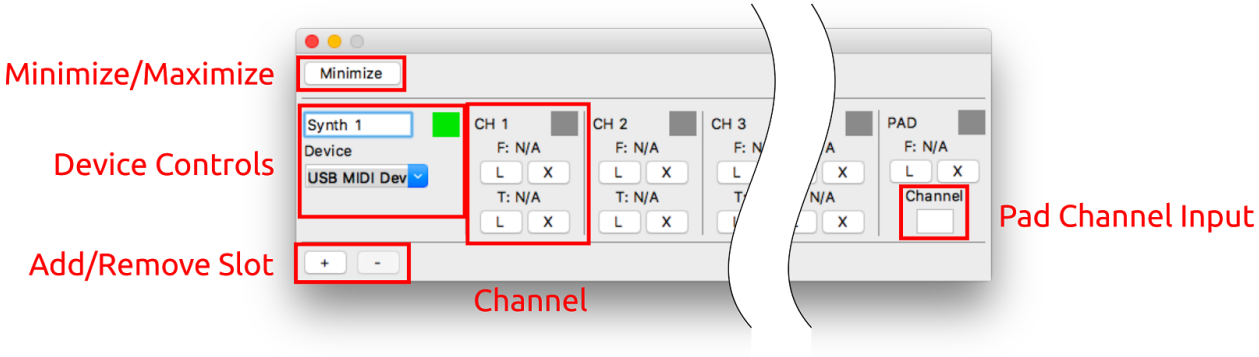
SwitchBox
User's Manual
v 1.0.1 "Canberra"

Contents

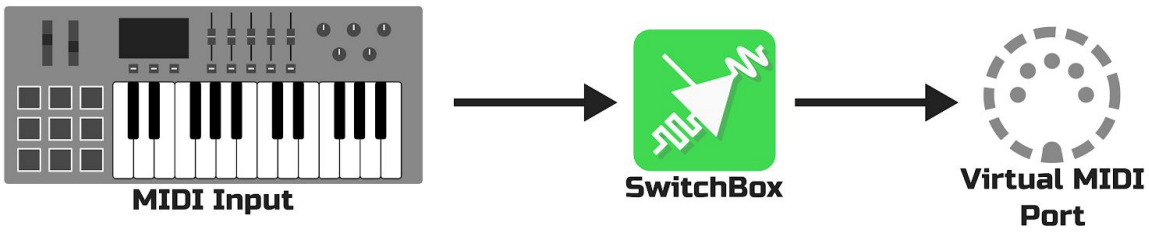
Overview

SwitchBox is a software-based MIDI translator that can change the channel of incoming MIDI messages in real time. Change instrument voices on a sampler or software synth with the touch of a button. Re-route as many instruments as you like. SwitchBox is designed to be easy to set up and simple to use, so you can get back to making music.

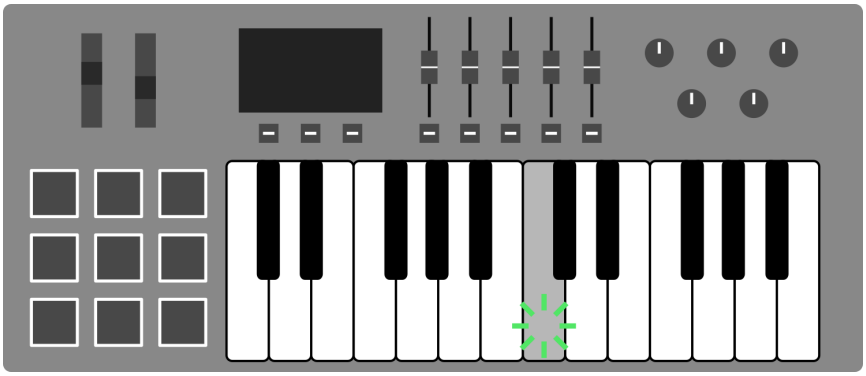
Getting to Know SwitchBox

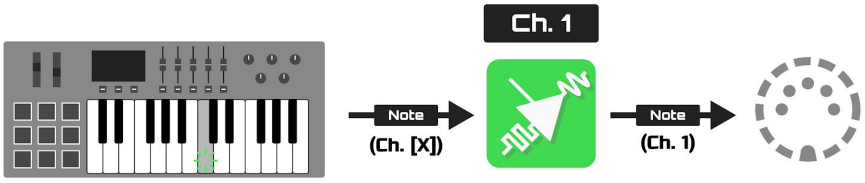


SwitchBox provides a virtual MIDI port to interface with your audio software. These virtual MIDI ports act exactly like real MIDI ports, and most programs won't be able to tell the difference.



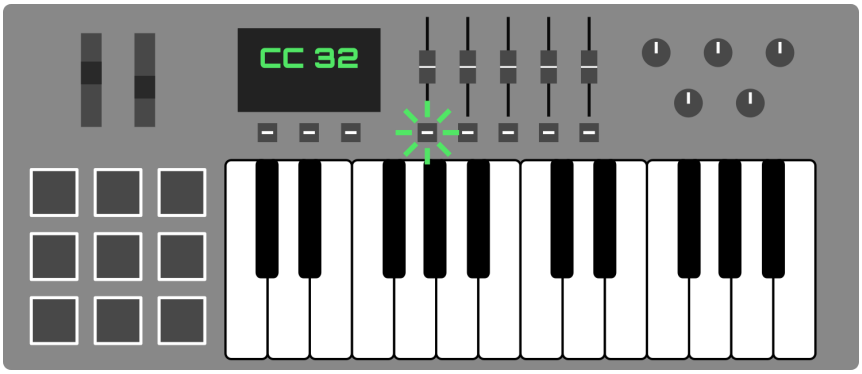
SwitchBox lets you change the channel of incoming MIDI messages. Keystrokes are re-routed to the currently-active channel.

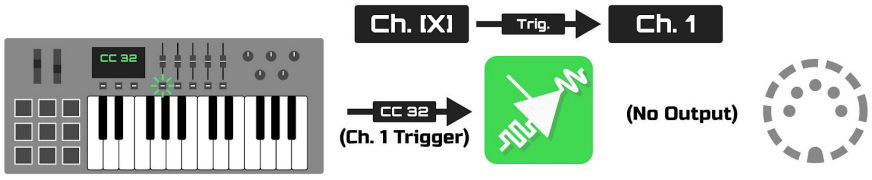




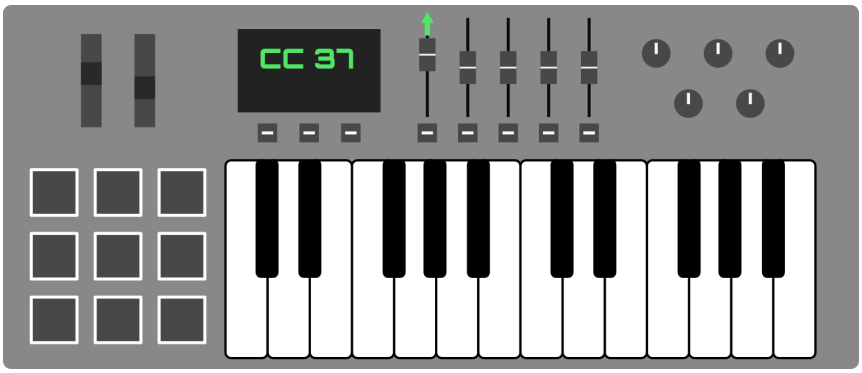
Each channel has a **Trigger** (except the **PAD** channel) and a **Fader**:
A **Trigger** is a **Continuous Controller (CC)** message that, when sent from your instrument, will **activate** the channel, telling SwitchBox to reroute your MIDI data through the specified channel number.

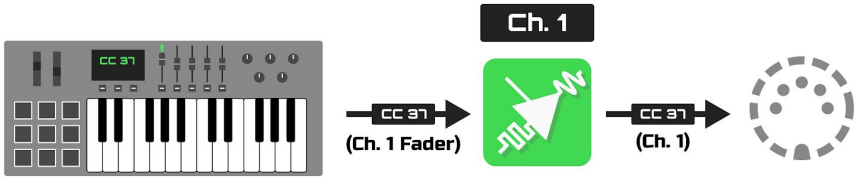
- Examples of CC messages are (but not limited to):
  - Volume Knobs
  - Rotary Switches
  - Push Buttons
  - Faders or Sliders
- Consult your instrument or MIDI controller's manual to find out which buttons or controls are capable of sending a CC message.



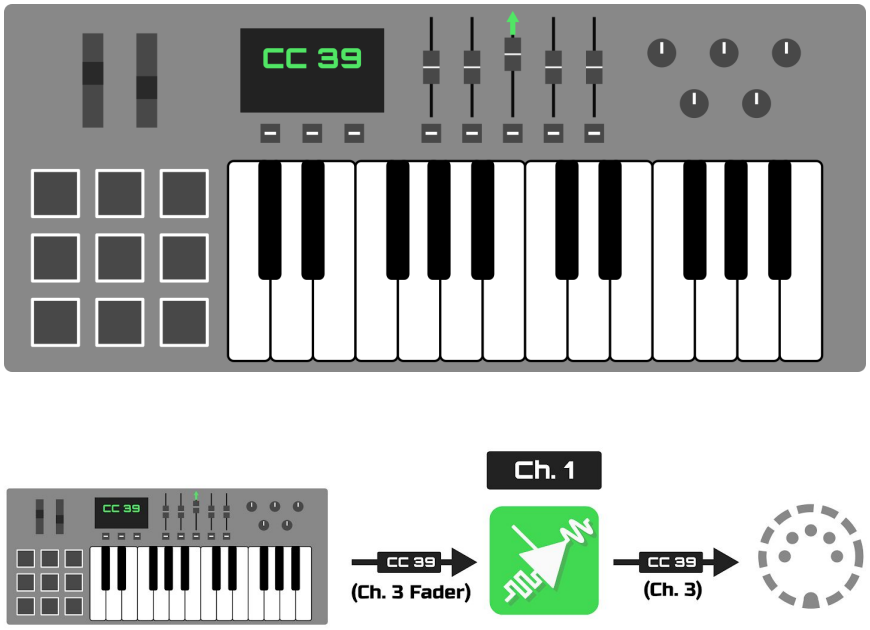


A **Fader** is a **Continuous Controller (CC)** message that will always be re-routed to this channel, even if another channel is active.

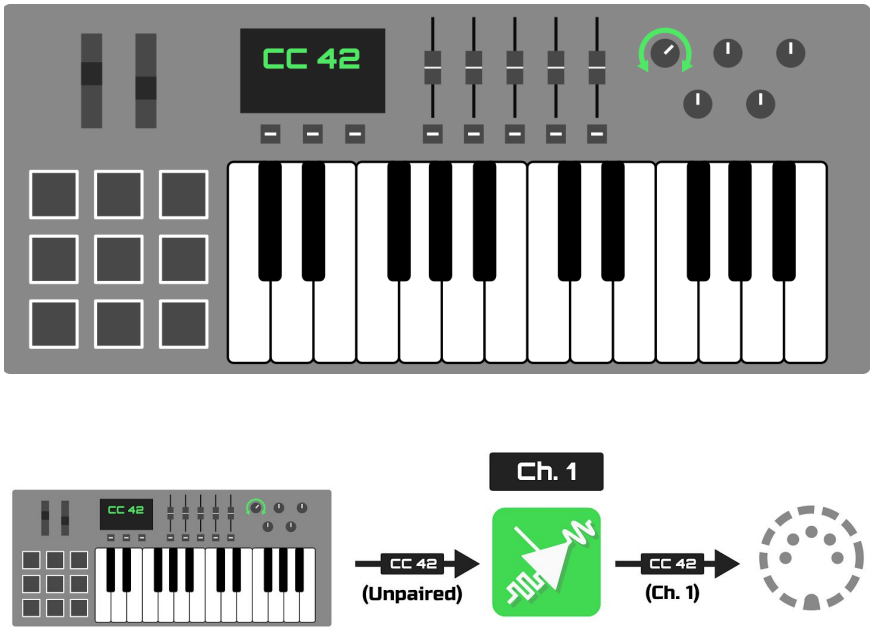




This can be used for making sure volume controls stay updated, even if you move them after switching to another channel.

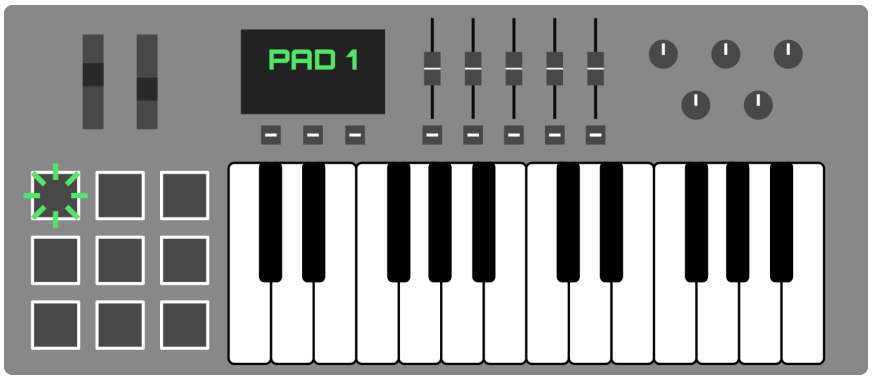


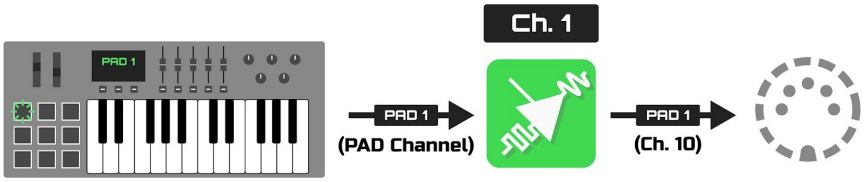
Any control that isn't a trigger or fader for a channel is routed to the currently-active channel.



The **PAD** channel is intended for instruments with percussion or sample pads. It's always active, so it doesn't need a Trigger.

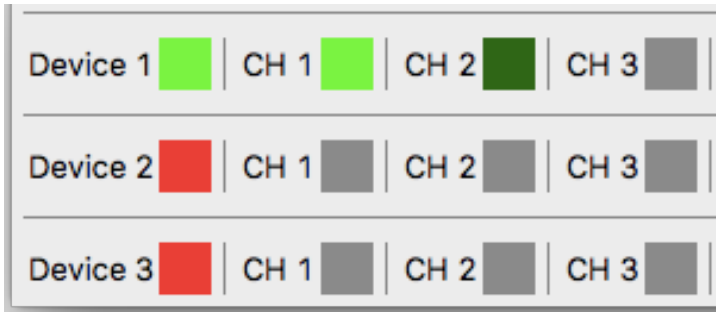
- Keyboards with pads will send these notes on a different channel from the keys (Usually Channel 10).
- When you set this channel, SwitchBox re-routes all incoming notes with this channel to **Channel 10**.



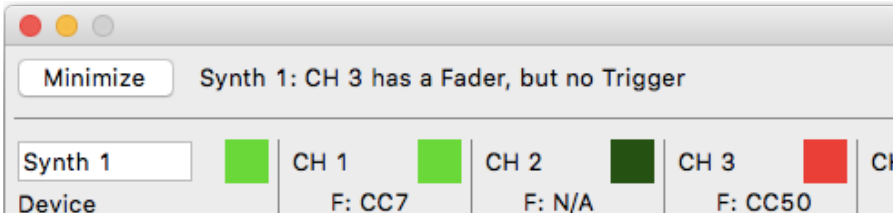


All channels have an indicator light to show its current status:

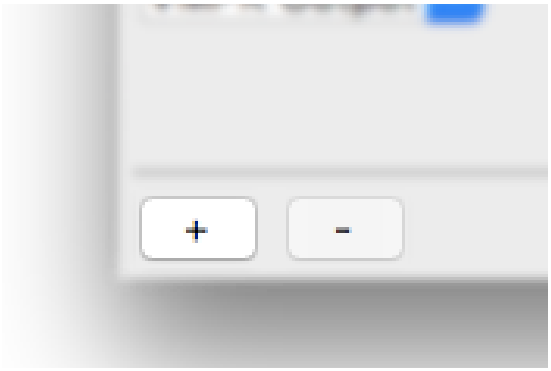
- **Light Green**: Channel is active
- **Dark Green**: Channel is correctly configured, but not active.
- **Yellow**: Channel is currently learning a fader or trigger.
- **Red**: Channel has a fader set, but no trigger, which means it was probably misconfigured. The fader will continue to operate correctly, but you won't be able to activate the channel.
- **Gray**: Channel is either not used, or another channel in its slot is learning a control.



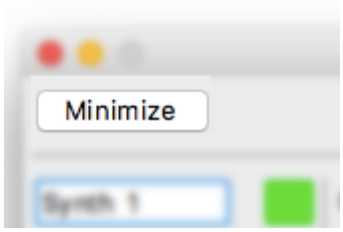
SwitchBox lets you know what's wrong, in plain English. When the unexpected happens, you might not have time to refer to the color key up above. SwitchBox has your back.

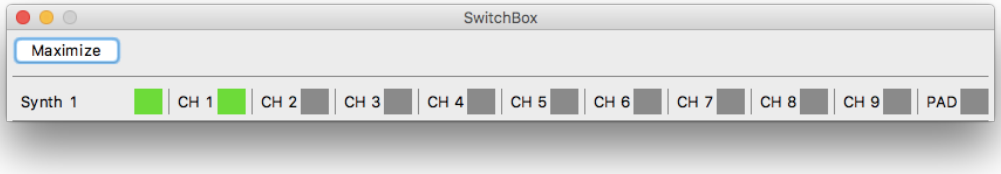


Add as many instruments as you want. Whether you're going solo or rehearsing with the band, SwitchBox has room for everyone, and plenty of virtual MIDI ports to spare.

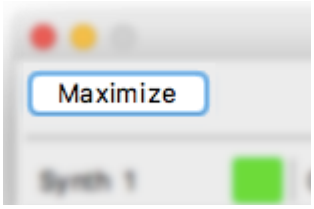


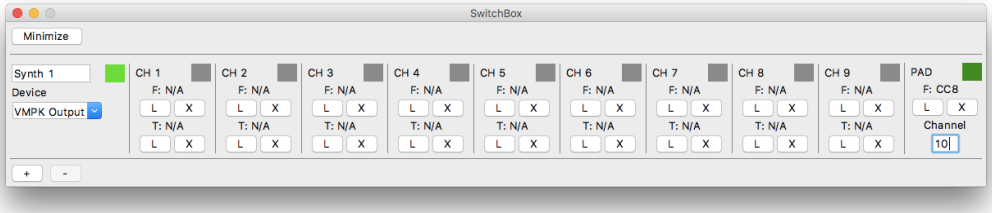
SwitchBox gets out of the way, so you can focus on your music. When you're all done setting up, click the **Minimize** button to make SwitchBox more compact, while still showing the most important information.





If you want to change some more settings, just click **Maximize** to restore SwitchBox to its original size.



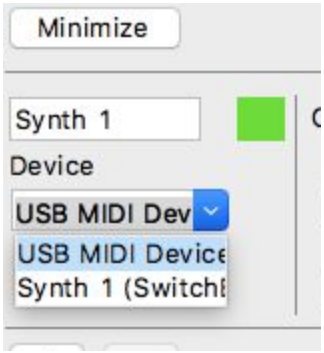


SwitchBox will automatically save any settings you change, the moment you change them. Even if something goes wrong, SwitchBox is ready to pick up where you left off.

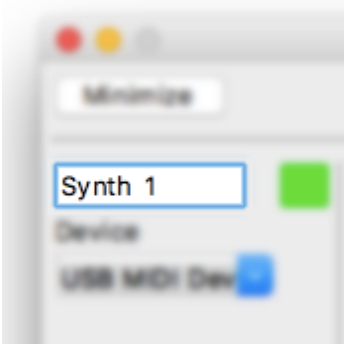
Setup

Connecting an Instrument

1. Verify that your MIDI instruments are plugged in, powered on, and recognized by your computer.
2. **Disconnect** your instrument from your sampler or synth program. All MIDI inputs will be re-routed through SwitchBox and its virtual ports from now on.
3. Open **SwitchBox**.
4. Navigate to the **leftmost** section of the instrument slot and click the **Device** dropdown.



5. Find the instrument you want to connect to this slot and click its name to connect. The **Indicator Light** will turn green upon successful connection.
6. Optionally, you may click the **Text Box** to rename the slot. This can help differentiate similar slots.



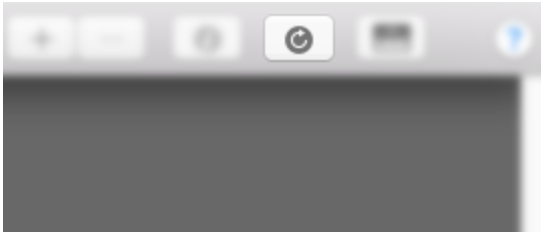
7. **Open** your sampler or synth program again, and connect to the **Virtual Ports** SwitchBox has created.
    a. SwitchBox's **Virtual Ports** correspond to their instrument slots, and are named after the titles you've given them, followed by "**(SwitchBox)**". For example, a slot titled **Synth 1** will appear as: **Synth 1 (SwitchBox)**

A Note on macOS

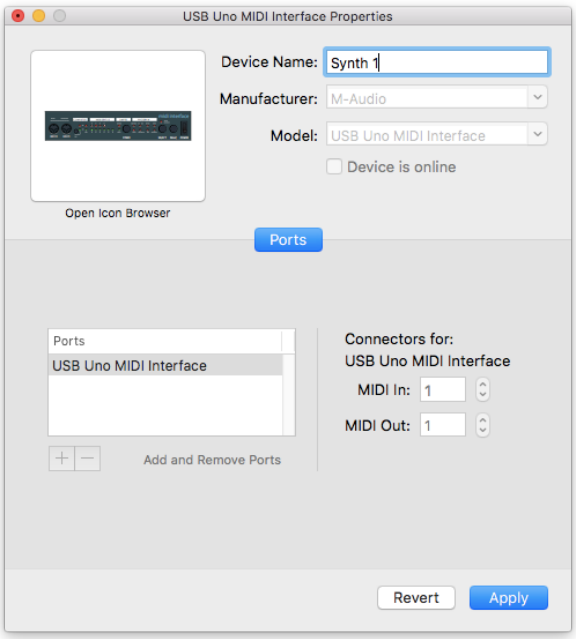
On macOS, you can double-check your MIDI setup by using the built-in **Audio MIDI Setup**.

1. Open **Audio MIDI Setup** by locating it in Launchpad, or by searching for it in Spotlight (⌘**-Space**).
2. Show the **MIDI Studio** by pressing ⌘**2**. The **MIDI Studio** will show you all the connected MIDI devices your Mac recognizes, along with any other devices it may have previously connected to.

3. Currently-connected instruments will be highlighted, while disconnected devices will be grayed-out.
4. If a device you just connected is not visible or is grayed-out, click **Rescan MIDI Setup** to refresh the display. If it still doesn't show up, check that you've installed the proper drivers for your device, or consult the device's manufacturer for further assistance.



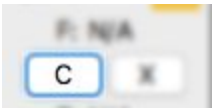
5. **Note: If you're connecting two or more of the same type of device, double-click the device and rename it, to avoid confusion.**



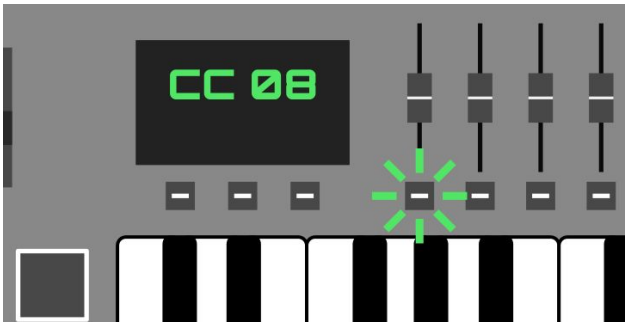
Assigning Channels

1. To set up a channel's **Trigger (T)**, click its corresponding **L** button. The channel's **Indicator Light** will turn yellow, which means it's ready to **Learn** a control signal. This instrument slot will not respond to any input while a channel is in this state.

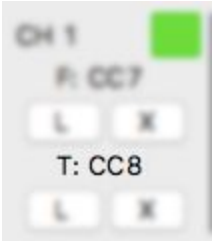
   a. You may click **C** to **Cancel**, if you didn't mean to click **L**.



2. Press the button or move the control on your instrument that you would like to activate this channel.

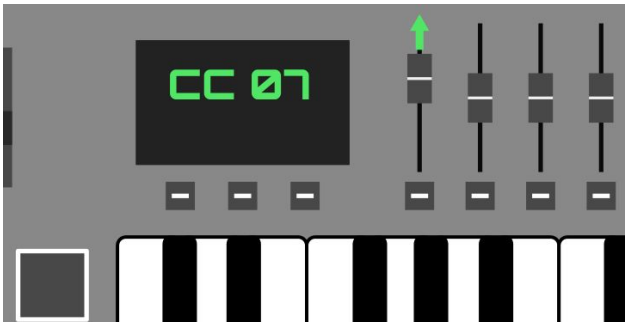


3. The channel should now display the CC number of the button or control it learned. Many instruments (especially keyboards) will also display this number, so it may be helpful to double-check that you've set the correct control.



4. Repeat the process for the channel's **Fader (F)**, by clicking its corresponding **L** button.

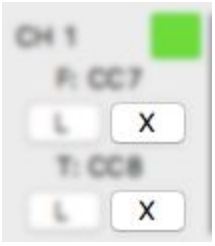
5. Move the control you would like to assign as the **Fader** control.



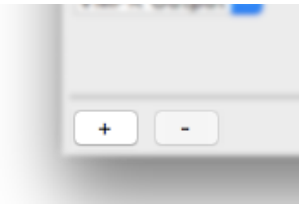
6. The channel should now update with its corresponding CC number.

7. On the **PAD** Channel, type in the channel number through which your instrument normally sends pad notes (Usually Channel 10, but consult your manual if it isn't).

8. To unpair a channel's fader or trigger, press the **X** button. **This action cannot be undone.**



9. Repeat for all other instruments you want to add to SwitchBox. To add more instrument slots, click the **+** button on the bottom of the SwitchBox window. To delete an instrument slot, click the **-** button. **Once a slot is deleted it cannot be recovered.**



10. That's it! You're ready to make music!
    a. It's recommended to open SwitchBox before you open software that uses its virtual MIDI ports, as they only appear once SwitchBox has started.

FAQ

How many instruments can SwitchBox handle at a time?
There isn't a hard limit on how many instruments you can connect.

However, large numbers of instruments may slow it down. The exact number will depend on your computer's speed or how many other applications you are running at the same time.

Does each channel require a Fader assignment?
No; faders are optional and don't need to be paired in order for SwitchBox to work.

All you need is the Trigger to be paired, so that SwitchBox knows when to activate that channel. Channels marked with "PAD" don't need a Trigger, as they are always active.

Can SwitchBox tell multiple identical instruments apart?
Short answer: Sometimes, although it's not recommended. You should rename them to be safe.

Super long answer: It depends on your computer's operating system, although it's still not recommended. Some operating systems assign instruments unique names, while others may not. SwitchBox connects to instruments by name, so it may get confused when instruments have identical names. Fortunately, some instruments let you change their names (Consult the user manual for instructions), and some operating systems, like macOS, let you assign your own names to instruments (See the steps above, under "Setup" for doing this in the Audio MIDI Setup).
Rule of Thumb: If you can tell instruments apart by the names that show up in SwitchBox's device selector, you don't need to rename them.

Is SwitchBox free?
Yes, and it always will be.

SwitchBox is a volunteer project, developed in the hopes that you might find it useful for your application. Since it's free, a money-back guarantee doesn't really do much, so this software comes with no warranty whatsoever. Consult the attached license document for details.

Is SwitchBox available for Windows?
Not at the moment, but it might be eventually.

Windows differs greatly from macOS and Linux in how it handles virtual MIDI ports, a core component of SwitchBox's functionality. That makes the current SwitchBox engine incompatible with Windows for the time being. However, this might change if interest is great enough.

Can I use SwitchBox for _____ ?
Sure, go ahead.

Whether it's for jamming out by yourself in the garage, recording professionally in a studio, or performing live on stage, you're free to use SwitchBox in any performance setting, even if you make money from it. Although not required, it'd be pretty awesome to mention SwitchBox (e.g. "Performed using SwitchBox" in the credits) if it's helped you.

Can I use SwitchBox's code for _____?
Sure, go ahead.

SwitchBox is open-source software, released under the MIT License. You're free to do almost anything you want to the source code (modifying, copying, distributing, even using its code in your own projects), as long as it's properly attributed. Consult the attached license document for details.

You can obtain a copy of the source code for free at:
https://www.github.com/SomeInterestingUserName/SwitchBox

How do I report issues, or suggest improvements for SwitchBox?
You can do both of those at the GitHub site listed above.

But here it is one more time, in case that got printed on another page:
https://www.github.com/SomeInterestingUserName/SwitchBox

You can create an "Issue", where you describe your issue or suggestion in detail, to submit to the official repository.

If you'd really like to get involved, feel free to fork the source code, play around with it, and submit a pull request once you're ready. You might even see your feature appear in an official SwitchBox release!

What's with the Australian version names?
Back in early development, SwitchBox used to be called "Switcheroo", but people got tired of all the kangaroo puns. (They were hopping mad!)

Each SwitchBox version is named after an Australian city, in alphabetical order, as an homage to those times. These city names are literally picked at random from a Wikipedia list, so feel free to suggest one for the next release!

What's the triangle-shaped symbol on the logo?
The logo for SwitchBox is neither a switch nor a box.

However, it represents a *tri-state buffer*, an electronic component that is basically a digital switch. Signal flows in, and signal flows out, but the output is enabled only when an external signal says so. Which is basically the gist of SwitchBox. The wiggly lines represent Square and Sine waves, which are common waveforms in synthesizer music. They're also easy to draw in the design program.

How do I open this document again?
If SwitchBox is open, simply press F1, or navigate to **Help > SwitchBox Help** *in the menu.*

A copy of this manual was also included in the original SwitchBox download.

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