



TWEAKER

TWEAKER EDITOR REFERENCE MANUAL

Table of Contents

1	Getting Started	3
	1.1 Before You Begin	3
	1.2 Installing the Editor	3
	1.3 Connecting the Tweaker	4
2	Overview	5
3	Control Settings	7
	3.1 Buttons	7
	3.2 Sliders and Pots	8
	3.3 Encoders	8
	3.4 LED Rings	9
	3.5 Drum Pads	9
	3.6 Group	10
	3.7 Global Settings	11
	3.8 FSR Settings	12
	3.9 Presets	13
4	Save to Tweaker	15
5	Tools	16
6	MIDI Hub	18
	6.1 Windows Setup	19
	6.2 Mac OS Setup	19
	6.2 MIDI Learn	19
7	The Settings Channel	20
8	Sysex Messages	21

1 Getting Started

1.1 Before You Begin

Java 1.6 or above is required.

For the Windows operating system, you can go to <http://www.java.com> and install Java.

For OS X 10.6 and below, Java is already installed. For OS X 10.7 and above:

- ▶▶ From the **Go** menu in the Finder, select **Utilities** (You can press [⌘]+[Shift]+[U] to open the Utilities folder)
- ▶▶ Open the **Java Preferences**.
- ▶▶ If Java is not installed, you receive the message: “To open ‘Java Preferences,’ you need a Java runtime. Would you like to install one now?”
- ▶▶ Click **Install** and accept the license agreement. The Java runtime will be downloaded and installed.

1.2 Installing the Editor

To begin the installation process, insert the installation CD into your computer’s optical drive. Open the TWEAKER EDITOR folder and select your platform.

- ▶▶ **MAC OS X:** Double click the file TweakerEditor.dmg’ to get started.
- ▶▶ **WINDOWS:** Double click the file TweakerEditor_Installer_WIN.exe’ to get started.

The installer will guide you through the rest of the installation process. Follow the on-screen instructions carefully.

1.3 Connecting the Tweaker

A TWEAKER must be connected to your computer before starting the editor. When the TWEAKER EDITOR first starts up, it searches all MIDI ports for a Tweaker. If a TWEAKER is connected, it will load the primary interface and let you edit settings.

If you have more than one TWEAKER attached, you can use the port menu at the top to select the port that communicates with the TWEAKER you want to edit.

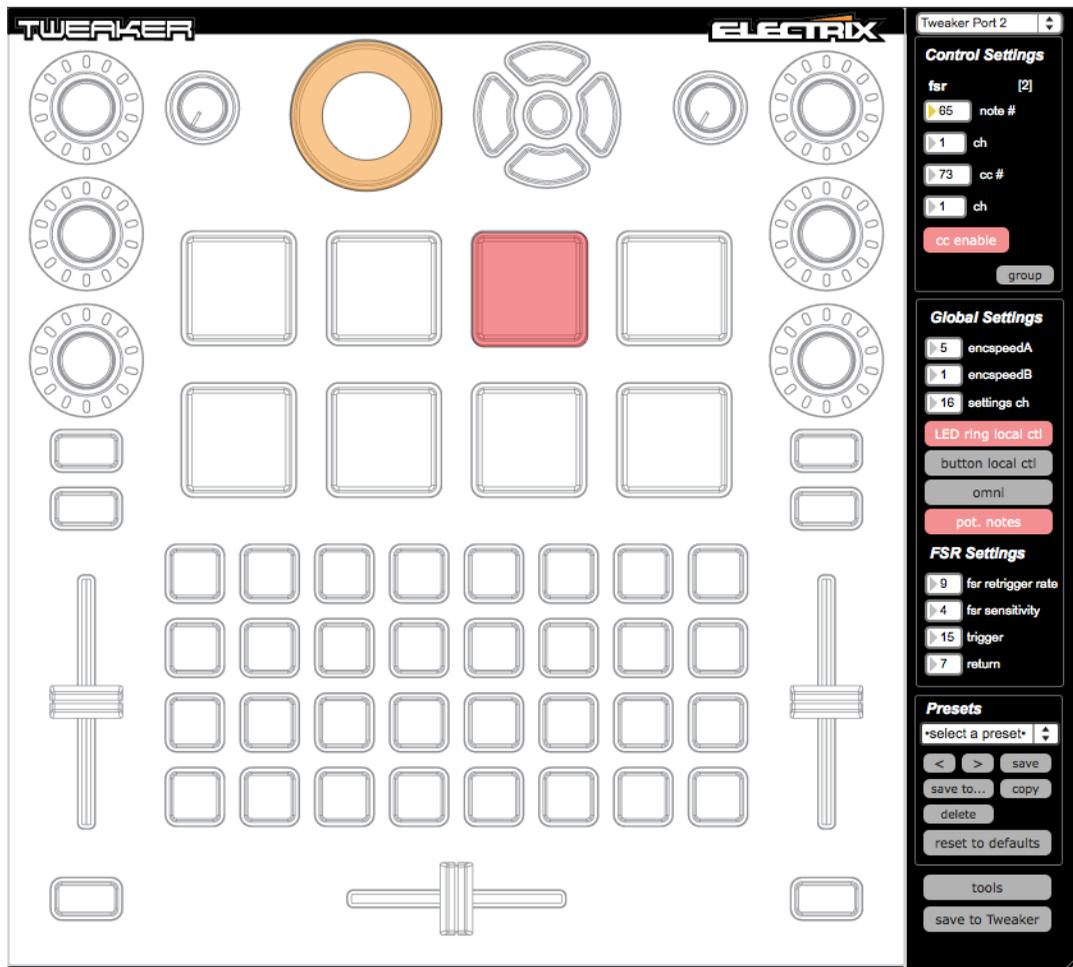
If a TWEAKER is not found upon starting the editor, you must quit and connect a TWEAKER before restarting the editor.

If you disconnect the TWEAKER while the editor is open, you will lose any unsaved changes, and you must restart the editor after reconnecting the TWEAKER.

Connections and MIDI ports are detailed in the TWEAKER user manual.

2 Overview

The ELECTRIX TWEAKER EDITOR provides a complete interface for modifying the settings and controls of the TWEAKER control surface. While the TWEAKER provides a lot of capability without ever changing its settings, many users will want to explore its full potential as a controller for various software and hardware platforms.



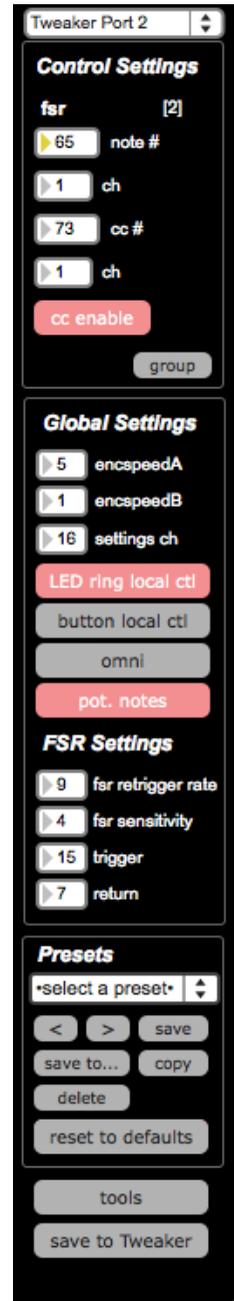
Some of the changes that you can explore are:

- ▶▶ Enable and disable local control of LED rings and button LED's
- ▶▶ Create preset files that are stored on the computer to extend the preset possibilities and share setups with others
- ▶▶ Test and confirm your Tweaker's settings and LED's
- ▶▶ Reset the Tweaker to default settings
- ▶▶ Change the function and look of LED rings
- ▶▶ Change the MIDI channels of different controls
- ▶▶ Change the output message of button from MIDI notes to continuous controller (CC)

It is easy to navigate and select controls. Use the mouse to click on controls on-screen or just use TWEAKER: press a button or turn a dial, and the appropriate editor will appear in the interface so you can change settings. This is, of course, limited to buttons and encoders: LED rings must be clicked on to show the LED ring Inspector panel.

Selecting a control highlights the midi note/cc# number box in the Control Settings panel enabling you to just type in a value. This makes it easy to quickly edit MIDI note and CC values: select, type, enter, select, type, enter, etc...

Any time you modify a property of a control, the change is instantly sent to the TWEAKER. However, for the change to be permanent – so the Tweaker will power up with the new settings – you must press the “Save to Tweaker” button. This writes the settings to flash memory on the hardware. Don't do this more than necessary, because the flash memory has a finite lifespan of data writes.



3 Control Settings

When you select a control, either by clicking on the interface or using a control on the TWEAKER, the Control Settings panel will show the current settings of the control for the parameters that you can configure. Buttons, LED's, encoders, drum pads and LED rings all have different possibilities, and each control has its own settings.

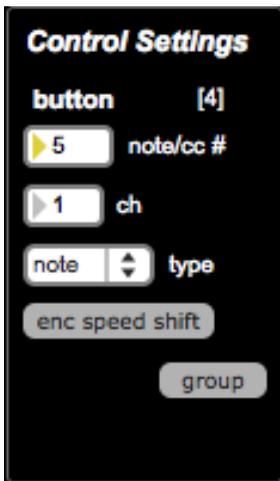
Some common things you'll see in the panels are the ID number (in square brackets) and the group button. The ID just provides an easy reference name to each control, particularly for support and communication purposes. ID's start at 0. See below for more about the group button.

3.1 Buttons

note/cc#

Enter a note or CC number that you want the button to send. Valid note and cc numbers range from 0-127.

① *If you want to display the note values as musical notes, go to More... in the top menu bar and select Display as Notes.*



ch

Enter a MIDI channel that the control will send on. All controls can be set to one of 16 possible channels.

mode

This determines if the number you entered in note/CC# will be a note or a CC message.

enc speed

A button can serve as the encoder speed shifter such that when it is held down, the encoders will react to turns at encspeedB (in Global Settings). Turn this switch on to configure the button with the encoder speed shift settings (note/cc#=126 and mode=cc). Only one button can serve as the speed shift, so if another button is configured as a speed shift, it will be de-assigned, and you will see a warning to this

effect. If a button is configured as enc speed, it will send no MIDI messages.

3.2 Sliders and Pots

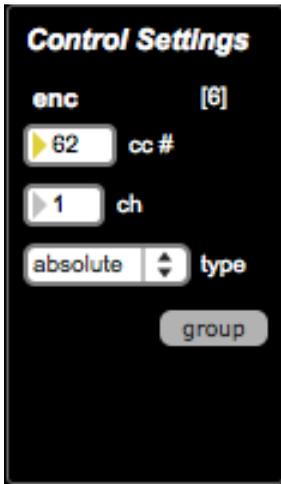
cc#

Enter CC number that you want the button to send. Valid CC numbers range from 0-119.

ch

Enter a MIDI channel that the control will send on. All controls can be set to one of 16 possible channels.

3.3 Encoders



cc#

Enter CC number that you want the button to send. Valid CC numbers range from 0-119.

ch

Enter a MIDI channel that the control will send on. All controls can be set to one of 16 possible channels.

mode

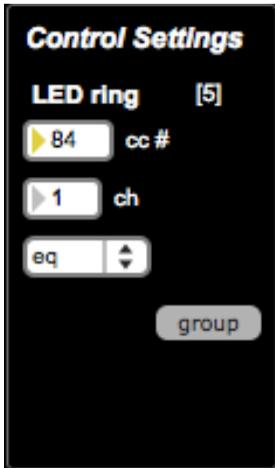
This determines if the number you entered in note/CC# will be a note or a CC message.

type

The type determines if the encoder will output a range of 0-127 (absolute) or provide increment/decrement values (relative). In relative mode, the encoder will output a stream of values of 1 when turned to the left, and a stream of 127 when turned to the right.

① *Relative mode works with "2's compliment" relative mode as used by Ableton Live and Serato.*

3.4 LED Rings



The LED rings for the encoders can be controlled independently of the encoder value. This is useful if you want to use the rings to display an absolute value while the encoders are in relative mode.

cc#

Enter a CC number that you want to use to control the LED ring to send. Valid CC numbers range from 0-119.

ch

Enter a MIDI channel that the control will send on. All controls can be set to one of 16 possible channels.

mode

The mode menu determines how the LED ring responds to knob turns.

- ▶▶ Walk: (default) illuminates only one LED at a time to indicate value.
- ▶▶ Fill: Illuminates all LED's that precede the current value, eventually lighting all LED's at the maximum value.
- ▶▶ EQ: Fills to the left or right from top-center and is ideal for DJ EQ's that have cut/boost values from center.
- ▶▶ Spread: Fills both sides from center. This is useful for parameters that indicate a "width".

3.5 Drum Pads

The velocity (pressure) sensitive drum pads can be configured to send a note as well as a CC aftertouch. Each pad can be set to its own channel.

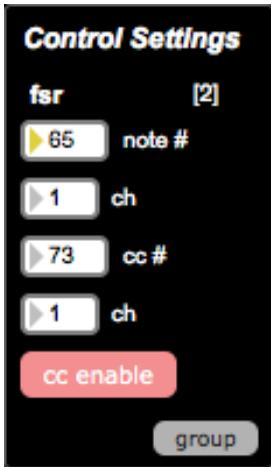
note

Enter a note number that you want the drum pad to send. Valid note numbers range from 0-127.

ch

Enter a MIDI channel that the note will send on. All controls can be set to one of 16 possible channels.

cc#



Enter a CC number that you want the drum pad to send on aftertouch (that is, holding down and pressing the pad). Valid CC numbers range from 0-119.

ch

Enter a MIDI channel that the control will send on. All controls can be set to one of 16 possible channels.

cc enable

If you do not want to send CC messages on aftertouch, you can turn that feature off for each pad with this switch.

3.6 Group

The group button offers a fast way to assign multiple controls of the same type with the same settings. Press the group button and all the settings of a given type will be copied, and all the note/cc# assignments will be grouped around the shown value, in order of ID.

① *The group function is available for the following control groups: drum pads, encoders, rings, button grid, and pots/sliders*

For example if you click on button ID 6 and assign it cc# 16, cc mode and set to channel 5, then all button will have that mode and channel and their note values will range from 10 (ID 0) to 41 (ID 31). Note that the IDs increase in count according to rows, left to right, where ID 0 is the top left button in the grid, ID 1 is to the right of that, and ID 8 is below it.

Another example can be illustrated using drum pads. If you want to transpose all drum pads up 8 semi-tones, you can easily do this. If a pad ID 0 is set to note 36, you can quickly shift all pads up by changing pad ID to note 42, then press group to transpose all pads.

3.7 Global Settings

The global settings affect all controls.

Encoder Speeds

You can set two different speeds for encoders. Speed A is the default speed of encoders. The B speed is accessed by assigning one of the buttons on the TWEAKER as the enc speed shift. When this shift button is held down, the encoders will respond with the speed set as B.

There are several possible speeds (or sensitivities) for the encoders. A low speed will mean the knob takes more rotations to go from low to high value, a high speed mean it will take less rotation.

Settings Channel

The settings channel is a special receiving channel for the TWEAKER that listens to MIDI CC values to change properties of encoders and LED rings. For those familiar with other MIDI controllers use of NRPNs, you will probably find this a more convenient and useful method. Details of the settings channel can be found below and in the Settings Channel Response Table document.

LED Ring Local Control

By default, if you turn an encoder on the TWEAKER, the LED ring will indicate the value, without needing a MIDI message to update the ring. This is usually desirable, but not always. If you want full and exclusive remote control of the LED rings, you'll want to disable the LED ring local control.

Button Local Control

By default, button local control is disabled, and requires MIDI input to illuminate LED's. If you want a button's LED to illuminate when you press a button, you'll want to turn this on. This is particularly useful if you are working with software or hardware that cannot provide MIDI feedback, and you want buttons to light when pressed.

Omni

Omni mode is a standard MIDI mode for many devices that receive MIDI input. If omni is on, then the TWEAKER will ignore



any channel settings of the incoming message and respond accordingly. For example, suppose the TWEAKER's bottom left button is configured to respond to note 37 on channel 1. If *omni* is off, then the TWEAKER would ignore any note 37 (on or off) received on any other channel. If *omni* is on, then that same note message would actually turn the LED on and off in response!

Potentiometer Notes

The “pot. notes” button will enable or disable a unique feature of the TWEAKER. When enabled, the 2 sliders and 2 analog knobs with center detent will send out a MIDI note with velocity 0 when the potentiometer is at exact center of the range. Additionally, a note will be sent with a different velocity when the potentiometer crosses the center of the range. If the center is crossed when decreasing the value of the pot, it will send out a note with velocity 64; if increasing the velocity is 127. The note values are fixed and cannot be edited, however, they match the default CC values of the pots. This feature is particularly useful when using the knobs trigger a filter sweep or when using the fader for pitch control.

3.8 FSR Settings

The FSR (Force Sensitive Resistor) enables the pressure sensitivity of the drum pads, and can be customized for sensitivity and response. These settings affect all drum pads.

Retrigger Rate

This describes the “temporal resolution” of the aftertouch CC messages of the drum pads. The number represents multiples of 5 milliseconds (ms). For example, with a setting of 9, the TWEAKER will send CC messages every 45ms while a drum pad is held down.

Sensitivity

A higher number makes the pads more sensitive, a lower number less sensitive, and therefore requiring more force to produce a note and velocity value.

Trrigger

The pressure at which a pad generates a Note On message (and starts streaming CC messages).

Min: 0

Max: 1023

Default: 15

Note: Least Significant Byte is Transmitted First.

Return

The pressure at which a pad generates a Note Off Message (and stops streaming CC Messages).

Min: 0

Max: 1023

Default: 15

Note: *Least Significant Byte is Transmitted First.*

3.9 Presets

Presets are a way of storing TWEAKER's current settings in a file on your computer, and recall them as needed. Preset files include both Control Settings and Global Settings. You can create any number of presets, and even share these files with others.

① **Presets are stored in your user preferences folder:**
Windows: /Users/username/AppData/Roaming/Electrix/Tweaker
OS X: ~/Library/Application Support/Electrix/Tweaker

Menu

The preset menu can be used to recall or rename a preset. Click on the name to edit it, or click to the right of the name to select a preset from the menu.

Save

Press this button to save all the current settings to the currently selected preset file for later use. If no preset is selected (that is, the menu reads "select a preset"), then you will be prompted to enter a name to create a preset.

Save to...

Press this button to save your settings to a new preset file. You will be prompted to enter a new name, and the preset will be available in the menu.

Copy

Press this button to copy the currently selected preset to a new file. You will be prompted to enter a new name, and the preset will be available in the menu. It is worth noting that if you have not saved current changes to the controls to the preset you are copying, they will not be part of the new preset.



Delete

Press this button to delete the currently selected preset. You'll be asked for confirmation before you commit this change! This will delete the preset file from your hard drive. There is no undo.

Reset to Defaults

Press this button to send the TWEAKER a message to revert to the factory default settings. You'll be asked for confirmation before you commit this change! The default settings are documented in the included TWEAKER MIDI Map document.

4 Save to Tweaker

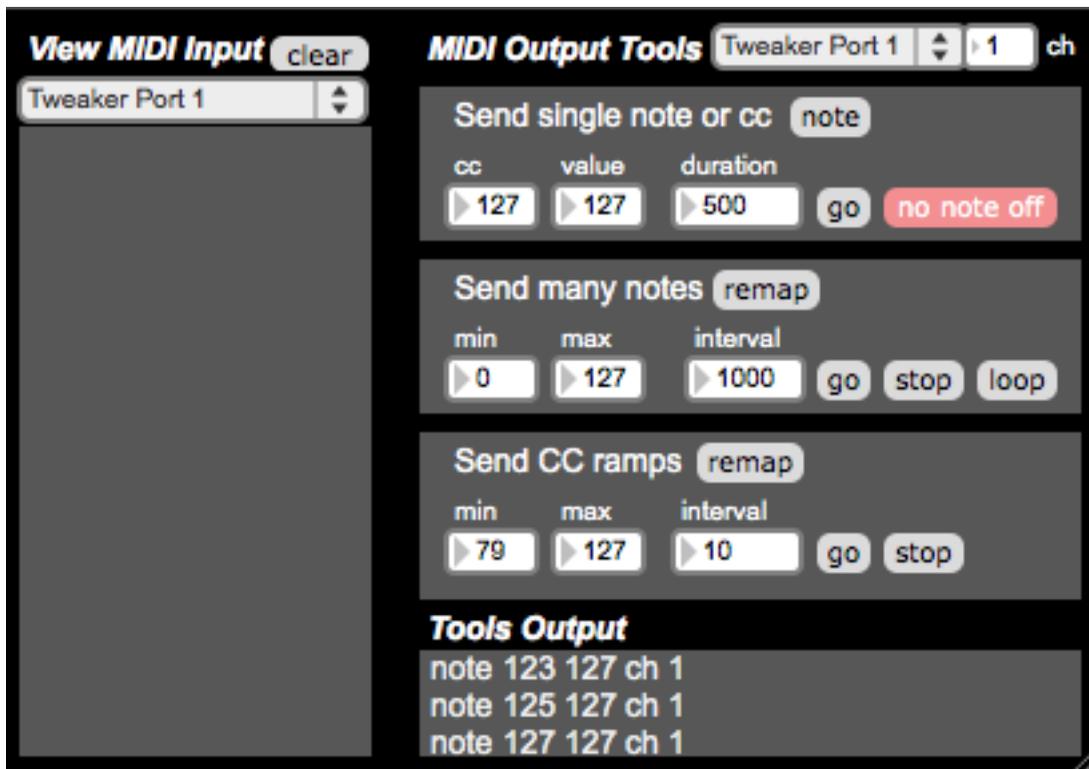
① *The save function is very important! Read carefully.*

When the TWEAKER is connected to power, settings are recalled from flash memory.

If you want the current settings to load when you connect the controller, you will have to press this button to store the current setup in flash memory. Otherwise, all changes will be lost when you disconnect the controller.

5 Tools

The tools window hosts a variety of utilities that help you test your controller's setup as well as have a little bit of fun! These tools are not exclusive to the TWEAKER: they can be used to send and MIDI from and to any port or device.



View MIDI Input

This panel displays the type, values and channel of incoming MIDI messages. It defaults to TWEAKER Port 1 but you can select a different port or device from the menu.

Send Single Note or CC

Use this tool to send a single note or CC to the TWEAKER. Use the note/cc toggle to change the

message this sends. Just type in a note number into the box and the note will be sent, or type in a velocity value and the note will be sent. You can alter the properties of the note with the velocity and duration field.

This is useful for testing LED's on a one-by-one basis, and observing how different velocities affect the illumination. If you want to keep an LED illuminated, turn on the no note off button so a note off is never sent and the LED will stay on. It is also useful for testing LED rings and their different modes. Just type in a CC number, then scroll through values in the value number box to send a stream of CC values to an LED ring.

Send Many Notes

If you want to see all the button LED's illuminate in succession, use the send many notes tool. You can set a range of notes with the min and max settings. Change the timing with the interval number box. You can set the duration of the notes using the duration field in Send Single Note. Press Go to start the cycle and Stop to cancel it. If you want the cycle to keep running, turn on Loop.

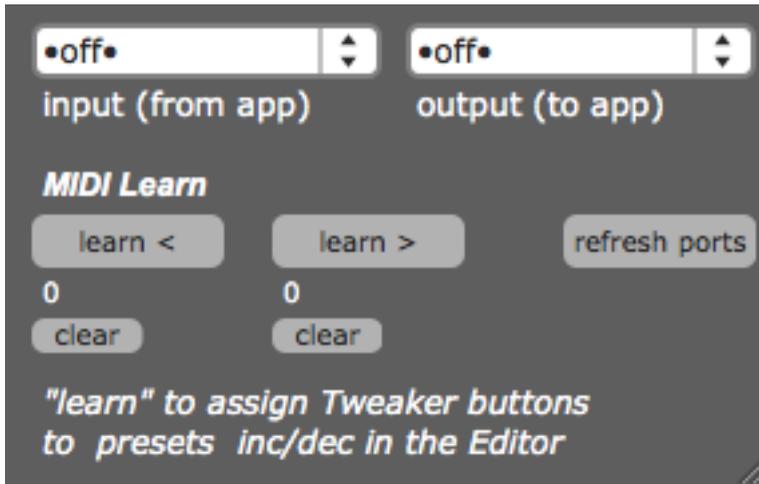
Send CC Ramps

Similar to the Send Many Notes tool, but sends ramps of data on successive continuous controller numbers. Use the min and max values to set the range of CC numbers you want to send, and use the interval setting to determine how fast the ramp is. For example, if you set the range to CC numbers 0-4 and an interval of 10, the program will send a ramp of values 0 to 127 on CC 0, taking (10×128) ms (~1.3 seconds) to complete the ramp, then it will do the same for CCs 1,2,3, and 4. You can use the remap feature to set the CC numbers to a succession of your choice, rather than the linear range using min and max.

Output from Tools

Displays the messages sent to the TWEAKER from the various functions in the Tools window.

6 MIDI Hub



The MIDI Hub provides a mechanism to direct MIDI from another application (over a MIDI loopback/IAC port) to the controller so you can dynamically change presets with the editor while using other music software. This is mostly useful for the Windows operating system, which only allows one MIDI software application to use the controller. If the MIDI Hub is in use, you will no longer be able to select controls in the editor using the TWEAKER - you will have to use your mouse. This makes the program more efficient, as it is presumed you are using the MIDI Hub for performance reasons, and would like to keep things streamlined!

i To open the MIDI Hub, go to **More...** in the top menu bar and select **MIDI Hub**.

6.1 Windows Setup

① *You'll need to install a 3rd-party 'MIDI loopback port' application to use the Hub. We recommend MIDI Yoke, which can be downloaded from <http://www.midiox.com>*

In your MIDI software (for example, Ableton Live), instead of selecting the controller's in/out ports in the MIDI preferences, select a MIDI loopback port, such as MIDI Yoke 1 (for input) and MIDI Yoke 2 (for output). In the editor's MIDI Hub, select the same ports to pass this data onto the controller. Once properly configured, you'll be able to use your controller as normal, and use the editor to reprogram the controller with Presets or direct interaction.

6.2 Mac OS Setup

① *You'll need to turn on the IAC Driver (Mac OS's built-in MIDI loopback port) in Audio MIDI Setup to use the Hub. Information about the IAC Driver can be found at <http://support.apple.com/kb/PH5172>*

In your MIDI software (for example, Ableton Live), instead of selecting the controller's inputs and outputs ports in the MIDI preferences, select the IAC Driver ports. In the editor's MIDI Hub, select the same ports to pass this data onto the controller. Once properly configured, you'll be able to use your controller as normal, and use the editor to reprogram the controller with Presets or direct interaction.

6.2 MIDI Learn

In order to switch presets with MIDI Hub, you first need to assign two buttons on the TWEAKER as 'next' and 'previous' preset selectors. To assign a TWEAKER button, simply press the learn button in the MIDI Hub window, then press the desired button on the TWEAKER to assign it. Repeat for the other button.

7 The Settings Channel

The settings channel is reserved for the use of standard MIDI CC messages to configure different TWEAKER settings. Send a CC number on this channel to TWEAKER and if it matches the CC number mapping for an LED ring or an encoder, the value will change its properties. Local Control settings can be accessed using CC # 122.

① *The default Settings Channel is 16. It can be changed using the Settings Channel setting in the Global Settings panel.*

Complete Settings Channel documentation is detailed in the TWEAKER user manual.

8 Sysex Messages

The TWEAKER EDITOR uses SysEx (System Exclusive) messages to communicate all changes to the TWEAKER. Complete documentation of all SysEx messages can be found in the TWEAKER user manual.



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Tweaker Editor was developed by Peter Nyboer for Livid Instruments.

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