

Synclavier

REGEN

KBI-1 Quick Setup



- Centronics Plug (top right) - Connect to VK/ORK
- Centronics Receptical (lower right) - Connect to existing VK/ORK cable
- USB Type B - Connect to computer or USB charger



USB TYPE B

Be sure to turn off power to both your PSMT “tower” and to the Velocity Keyboard before removing the cable from the keyboard or connecting the KBI-1 to the keyboard!



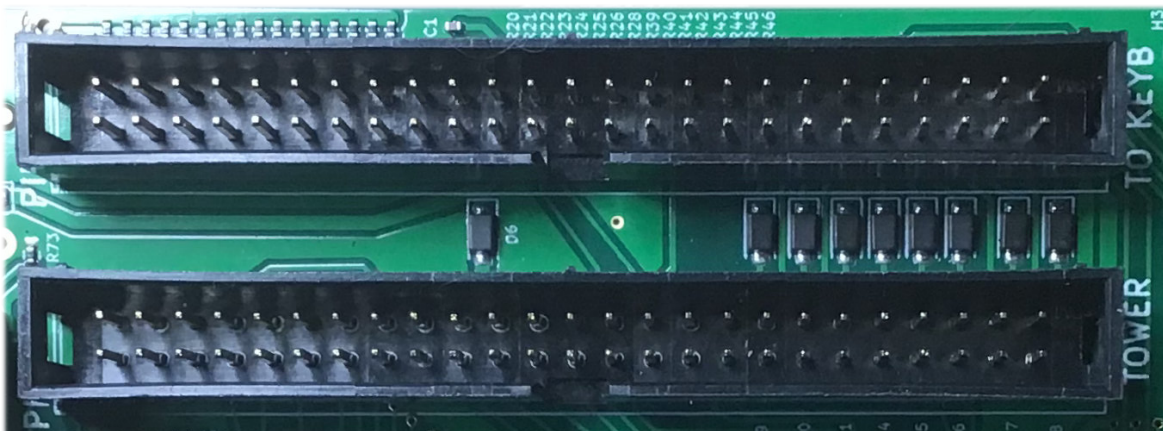
The USB-C connector is only used to power an Original Keyboard - it is not used with a Velocity/Pressure Keyboard. A 5-volt USB-C charger is required for ORK. Any 5-volt USB-C charger should work as less than 1 watt is required by the ORK.

5-PIN MIDI is available with the supplied Type A MIDI TRS to DIN adapter.

Installation notes

The KBI-1 is designed to plug directly into the keyboard, and to connect to Synclavier PSMT “tower” using the existing keyboard cable. If there is no tower the Centronics Receptical should remain unconnected.

If you wish to install the KBI-1 in the tower machine room you can switch the positions of the adapter cables so that the Centronics Plug connects to the tower, and the Centronics Receptical connects to keyboard using the existing cable. Remove the 4 case screws to access the flat cable headers.



Operation

The KBI-1 includes a “sense” circuit that detects when the PSMT “tower” is turned on. When the tower is turned on the KBI-1 withdraws itself from the circuit and the keyboard can be used with your existing system. When the tower is powered off then the KBI-1 controls the keyboard.

Self-test

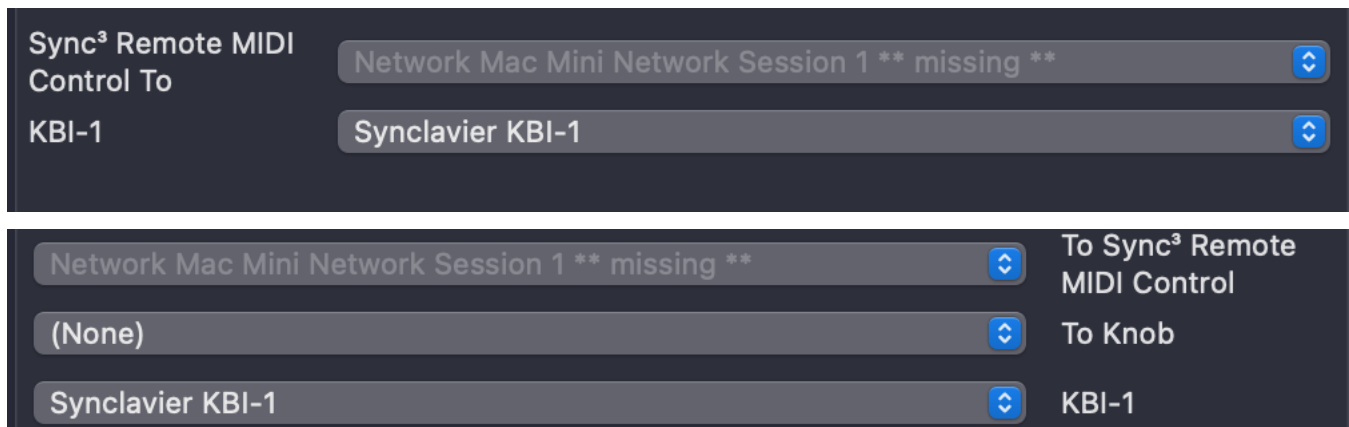
If the KBI-1 is not communicating with Synclavier³ or Synclavier Regen, the buttons will light when pressed, and keyboard activity will be shown on the button panel.

M64k

Some VKs have non-standard computer connections. Keyboard cables with a simple flat cable connector on one end will need an adapter of some kind, although a flat cable connector should plug right into the KBI-1 internally. Some modified installations that are used with a M64k only may need an adapter cable of some kind.

Using KBI-1 with Synclavier³ Application

The latest version of the Synclavier³ application recognizes the KBI-1. You have to assign **both the input and output** midi devices using the MIDI Patching Window. When properly connected the knob on the ORK/VK will, for example, act as the knob input in Synclavier³.

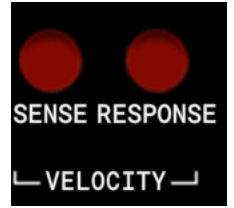


Also, *in theory*, if you are connecting your Mac to an original Synclavier system using a serial port (using Synclavier³ in “Serial Port” mode), messages from the KBI-1 are forwarded to the Synclavier System over the serial port connection.

Connecting the KBI-1 to Synclavier³ or Synclavier Regen over 5-pin MIDI is not currently supported.

VK Velocity Response Curves

The original Synclavier systems had two settings for controlling the musical use of the keyboard velocity: SENSE and RESPONSE. The SENSE (sensitivity) setting uses a scale of 0 to 100 to control the dynamic range of the velocity parameters as it is applied to volume. The RESPONSE (response) setting determined the “hardness” of the keyboard, that is how hard you have to play to achieve full volume.



The KBI-1 uses the SENSE and RESPONSE buttons to enter identical sensitivity and response parameters. Their use will be straightforward when the KBI-1 is connected to Synclavier Regen or to other non-Synclavier devices.

To adjust the velocity curve within the KBI-1, press **both the SENSE and RESPONSE** buttons at the same time. This brings those buttons under the control of the KBI-1. The MIDI Transpose setting (+/- 4 octaves) is accessed using the Filter Cutoff button. The START button can be used to store the velocity curve and transpose setting to non-volatile memory within the KBI-1. Press the STOP button to return control of all buttons to Synclavier³. More detail on KBI-1 parameters is available in documentation specific to the VK or to the ORK.

“Linear” Velocity Response Curve

The KBI-1 defaults to a “linear” sensitivity curve whereby the energy of the keystroke is matched to the magnitude of the MIDI velocity value. The linear sensitivity should be appropriate in most cases.

When using the KBI-1 with Synclavier³, Synclavier³ applies its own MIDI velocity curve to the incoming MIDI velocity. So in that situation the linear sensitivity curve should be used within the KBI-1.

What is the “Velocity Sensitivity”

The velocity sensitivity is an arbitrary scale from 0 to 100, with a default value of 100. At the default value of 100 the full MIDI range 1 to 127 is spread over the full mechanical range of the keyboard (from a very fast key press to a very slow key press).

Lowering the sensitivity will have the effect of increasing the volume of the *pianissimo* notes. It makes the VK “less sensitive” to the velocity input.

What is the “Velocity Response”

The velocity response is an arbitrary scale from -4 to +9, with a default value of 3. At the default value of 3 a strong player can achieve full volume with a strong *fortissimo* note.

Increasing the response makes it easier to achieve full volume. That is, with a higher response setting *mezzo-forté* playing will sound at full volume.

Build 92 of the Synclavier³ application is required when using the KBI-1 with Synclavier³. The latest version of Synclavier³ may be downloaded at:

<https://www.synclavier.com/Downloads/Synclavier3.dmg>.

Using KBI-1 with Synclavier Regen

Release 1.13 of software for Synclavier Regen supports the KBI-1. Knob input is supported, as are many of the Timbre design buttons. Regen software updates are available at:

<https://www.synclavier.com/regen-downloads/>.

Using KBI-1 with Synthesizers and Digital Audio Workstations

The KBI-1 sends traditional MIDI messages (note-on, note-off, pitch-bend, mod wheel, sustain pedal, ribbon controller etc) using MIDI Channel 1 (Channel 0x00). The other MIDI channels are used to send out button presses, knob movements and an alternative Ribbon Controller message. The precise technical specifications for the KBI-1 MIDI Messages are available at **[GitHub](#)**. These MIDI messages are also sent out the 5-pin MIDI connector.

Note that there are two TRS MIDI Connectors on the KBI-1. Only the output connector is active in the current KBI-1 software release.

In theory it would be possible to write a software plug-in that would map VK/ORK buttons to functions within your preferred Digital Audio Workstation. Some DAWs may let you map Note On/ Note Off messages from specific MIDI Channels to functions within your DAW. For example pressing the Start button the VK could start your DAW sequencer.

The ORK and VK displays can be addressed on a line-by-line basis using MIDI messages. The Synclavier KBI-1 MIDI Protocol is documented at **[GitHub](#)**. The messages to control the VK display and the button LEDs are only available over USB MIDI; they are not available via the MIDI 5-Pin DIN connection.

Firmware Update

The micro-controller within the KBI-1 incorporates firmware which may need to be updated to fix bugs or support new features. The instructions for performing a software update for the KBI-1 will be provided as needed.