

# Midi Looper

## Overview

Midi Looper is a small battery-powered box that connects between the midi-out of a keyboard controller and the midi-in of a sound generator module (or an all-in-one synth/keyboard that has midi-in/midi-out sockets and the functionality to “disconnect” the internal midi flow between keyboard and sound generator). It has just one switch and this is for turning the power on and off. Control of the looper is achieved by activating a “command” mode, whereby the note keys operate the various looper functions instead of producing sound. The “switch” to activate command mode is either a pre-selected note (e.g. unused note at the top or bottom of the keyboard) or control change (cc) knob/button; it is chosen when the unit is switched on.

The loop can be 2, 4 or 8 bars long. It can run in  $\frac{3}{4}$  or  $\frac{4}{4}$  time. There is a tap tempo function or the looper will synchronize automatically to an external midi clock and respond to start, continue and stop commands. All midi information (on all 16 channels) can be recorded up to a maximum of 400 midi events. Each midi channel has a separate A/B recording zone which can be freely switched. Individual channel (and A/B) recordings can be quantised or deleted. A bi-colour led shows tempo and progress through the bars. A metronome (General Midi hi-hat) can be activated as midi-out on channel 10.

## Keyboard command map

Start/ stop	record on/off	tap tempo	quant 1/8 (1/6)	quant 1/16 (1/12)
		2 bar	4 bar	8 bar

midi channel select 8	midi channel select 4	midi channel select 2	midi channel select 1	A/B	Toggle hi-hat	delete channel
				4/4 time	$\frac{3}{4}$ time	delete all

Red shows key function when looper not running

## Operation

Connect a midi cable to the midi-out on the controller keyboard and plug the other end into the looper - the socket closest to the LED is for midi-in. The socket on the other side of the unit is midi-out and connects to the midi-in of a sound module/synth. If using a combined keyboard/sound module/synth then “local” keyboard control should be turned off as the looper passes all midi messages from input to its output. Make sure the cables are connected and the midi-controller is powered up before switching on the looper (sometimes a midi controller outputs messages when it is first turned on and this may interfere with the looper start up routine).

The power switch is located on the underside:



Switch on and the LED will flash rapidly red/green:



This means the looper is waiting to define a command control from the keyboard. Choose a note or control change knob/switch that is not needed musically:

*Keyboard note:* This may be at an extreme of the keyboard (e.g. C1) or a note that is not going to be used in your performance (e.g. out of musical key). Alternatively many keyboard controllers have buttons that can be defined to send specific midi messages. One of these could be assigned to C0 for example, which is unlikely to be used in a performance.

*Control change:* Increasing the cc value will activate command mode; reducing cc value will return the keyboard to normal musical function. For example: a cc button that outputs a value of 127 when pressed and zero when released, will act as a perfect command switch. If using a knob then any clockwise rotation will activate command mode; anti-clockwise rotation will restore the musical keyboard. An occasional problem may be seen with knobs that “jitter”. This is where certain positions of the knob cause a fluctuating up/down cc output around an average value (e.g. 67,68,67,68,67 etc). This will confuse the looper which will rapidly change between modes. It is a problem of the midi controller keyboard and an alternative command control should be used.

Once decided, define the command switch by simply pressing the note key or moving the controller knob (or pressing the controller switch). The LED will change to a steady green. Now operating the key/knob/button will activate command mode and the LED shows a steady red to confirm this. Release the key/button, turn the knob anticlockwise and the LED returns to steady green (or flashing if looper is running – see below) indicating normal musical function. The command control is recognised on any midi channel, so it doesn't matter what channel your keyboard is set to. The command assignment always occurs at start up so it is easy to re-assign the command note by turning the looper off and then on again, even in a performance. Once defined, pressing and holding this keyboard note will switch the looper to command mode and the note keys on the keyboard will function as switches and will not produce sound from the synth/module. The functions are shown in the chart above and are explained below. The commands work irrespective of octave or midi channel. The only exception being if the command control is assigned to a note, which obviously cannot function as a switch as it is being held down to maintain command mode. Simply use the same note in another octave.

## Command mode

Certain keys have different functions when the looper is running/stopped.  
The following loop set-up functions are assigned when the looper is not running:

2 bar loop – press F# key  
4 bar loop – press G# key  
8 bar loop – press A# key  
4/4 time – press G key  
¾ time – press A key

### *Start/stop*

Pressing the C# key once will make the looper start as indicated by the LED flashing green in time with the tempo. The beginning of the loop is indicated by a red flash, and a longer green flash indicates the beginning of each bar. Press the C# key a second time and the looper will stop as indicated by steady green LED. The looper will sync to incoming midi clock signal and also respond to the midi start, continue and stop commands.

### *Record*

Pressing the D# key puts the looper into record mode; the LED will flash red with the tempo. The beginning of the loop is indicated by a green flash and each bar by a slightly longer red flash. Any midi information will now be recorded and played back as the loop repeats. The looper holds 400 midi events which is plenty for 8 bars, but understand that midi cc's or pitch bend data will quickly use this up. Particularly beware aftertouch which you may not realise you are sending from your keyboard. To stop recording but keep looper running, press the D# key again. The stop recording and the looper playing, press C#. The recorded data is not held after power down.

### *Metronome*

Pressing the A key will toggle the “metronome” on/off. This is a midi channel 10 note 42 message (General Midi hi-hat) sent on every beat. To hear it, there must be a suitable sound module responding on channel 10.

### *Tap tempo*

The default tempo at start-up is 120bpm. Hold the command key down and press the F# key repeatedly at the desired tempo. Note that you cannot see the LED flashing in command mode (it shows solid red) but the tempo change will be reflected immediately if the loop is playing (or metronome is activated and a channel 10 sound module is active). External midi clock automatically overrides the internal clock as soon as it is detected. To return to internal clock it is necessary to turn the unit off and then on again (will be made automatic in a later firmware release).

### *Selecting midi channel*

The notes C, D, E and F are used to select midi channel. You press them in combination effectively forming a binary number. C represents 8, D represents 4, E represents 2 and F represents 1. So for example, to switch keyboard/looper to channel 10 press C and E together as a “chord”. One beat later the LED will briefly flash green showing that the command has been accepted. The looper will now record and pass through midi data on that channel, regardless of what channel the incoming data is set to. Use this, for example, to access a different sound on a multi-timbral sound module. The A/B, quantize and channel delete commands also operate on the selected midi channel.

### *Quantize*

Pressing the G# key quantizes recorded midi data on the selected midi channel to 1/8 bar when in

4/4 time, or 1/6 when in  $\frac{3}{4}$  time.

Pressing the A# key quantizes recorded midi data on the selected midi channel to 1/16 bar when in 4/4 time or 1/12 when in  $\frac{3}{4}$  time.

Quantize operates on the active A/B channel only (see below).

### *A/B channels*

Each midi channel has an A or B loop that are recorded separately. Use this to change pattern for a specific instrument. Or record nothing on the B channel and use it as a mute. Pressing the G key toggles the A/B channel.

### *Channel delete*

Pressing the B key when the looper is running deletes all midi data on the active A/B loop of the selected midi channel.

**IMPORTANT:** Pressing the B key when the looper is stopped deletes all midi data from the loop and resets the tempo to 120bpm.

### Re-flashing the firmware

The firmware can be changed easily via mid system exclusive messages. This allows updates to the looper and also totally new functionality.



Open the case by removing the four screws. Hold down the small push switch and turn the unit on. The LED will briefly flash red/green then show steady green. Now send the appropriate system exclusive file to the unit from a suitable PC/Mac program\*. As data is received the LED will flash green and finally the unit will re-boot. Close the box, replace the screws and enjoy!

\*For PC, the fantastic and free Midi-Ox ([www.midiox.com](http://www.midiox.com)) works well. Settings....  
For Mac????????????????????

### Battery

Open the case by removing the four screws. Replace the 3 x AAA batteries. Alkaline or rechargeable types can be used, but do not mix them.