



TEControl
USB MIDI Breath and Bite
Controller
User Guide

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For up to date information, including documentation and software, please visit the support pages at

<http://www.tecontrol.se/products/usb-midi-breath-bite-controller/support>

For general information about products email us at info@tecontrol.se

For technical questions and enquiries email us at support@tecontrol.se

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Introduction

With sample libraries getting better and better and physical modeling advancing to incredible realism, the need for good controllers is obvious.

Our breath controllers fill the gap left by Yamaha when they discontinued production of the BC3 breath controller. We like to think that we took over where Yamaha left, providing the MIDI community with not only a replacement but taking it to a new level.

To quickly get an overview of the past and present world of breath and wind controllers, we recommend checking out the following page:

<http://www.patchmanmusic.com/WindControllerFAQ.html>

1 Overview

The USB MIDI Breath and Bite Controller (BBC) is designed for musicians who want to add expression and realism to their performance when using sample libraries. The BBC features two sensors which generate two independent MIDI CC data streams corresponding to the amount of activation of each individual sensor.

- The Breath Controller uses the built-in piezoelectric pressure transducer as input.
- The Bite Controller uses the integrated force sensor (located on the lower side of the mouthpiece) to measure the force applied through lip pressure.

The mouthpiece has an adjustable bleed valve and comes with a food-grade thin silicone cover that protects the force sensor from humidity. **Please take care not to displace or damage the silicone cover with your teeth.**

With the downloadable Configuration Utility you can configure all the parameters as well as save and load your own presets in your computer.

A unique feature of the BBC is its ability to shape the response from sensor input to MIDI output. It also provides a monitor function simplifying the sensitivity adjustment. This way you can optimize the sensitivity to your own style of playing. The attack and decay filter controls can be set from 0 to several seconds. They allow you to make very smooth swells.

Signal processing algorithms guarantee full resolution over the configured sensor input ranges. The event-driven MIDI output streaming filters out redundant data not to overflow your MIDI input and assures lowest latency. MIDI messages are transmitted only when input changes cause a change in the MIDI output value.

1.1 System requirements

The BBC does not require installation of drivers or software. It will work straight out of the box with both Windows (XP or later) and Mac OS (10.5 or later).

If you need to change the default settings (for example the MIDI CC), you can optionally download the free Configuration Utility from our website.

2 Getting started

2.1 Installation

Connect the BBC to a USB port on your computer, which will automatically detect it and configure the operating system's built-in USB-MIDI class driver. The BBC will show as "Breath Controller X.Y-ZZZZZZZZ" in your applications, where X.Y is the firmware version and ZZZZZZZZ is the unique serial number.

2.2 Default settings

The BBC comes pre-configured with default settings and will work straight-out-of-the box. The default settings for both controllers are as follows:

- Linear sensitivity
- Input and output ranges set to maximum
- Attack and decay filters set to minimum
- MIDI Message set to Control Change
- MIDI Channel 1

and the individual controllers are set to the following MIDI CCs

- Breath Controller CC2
- Bite Controller CC1

3 Configuration Utility

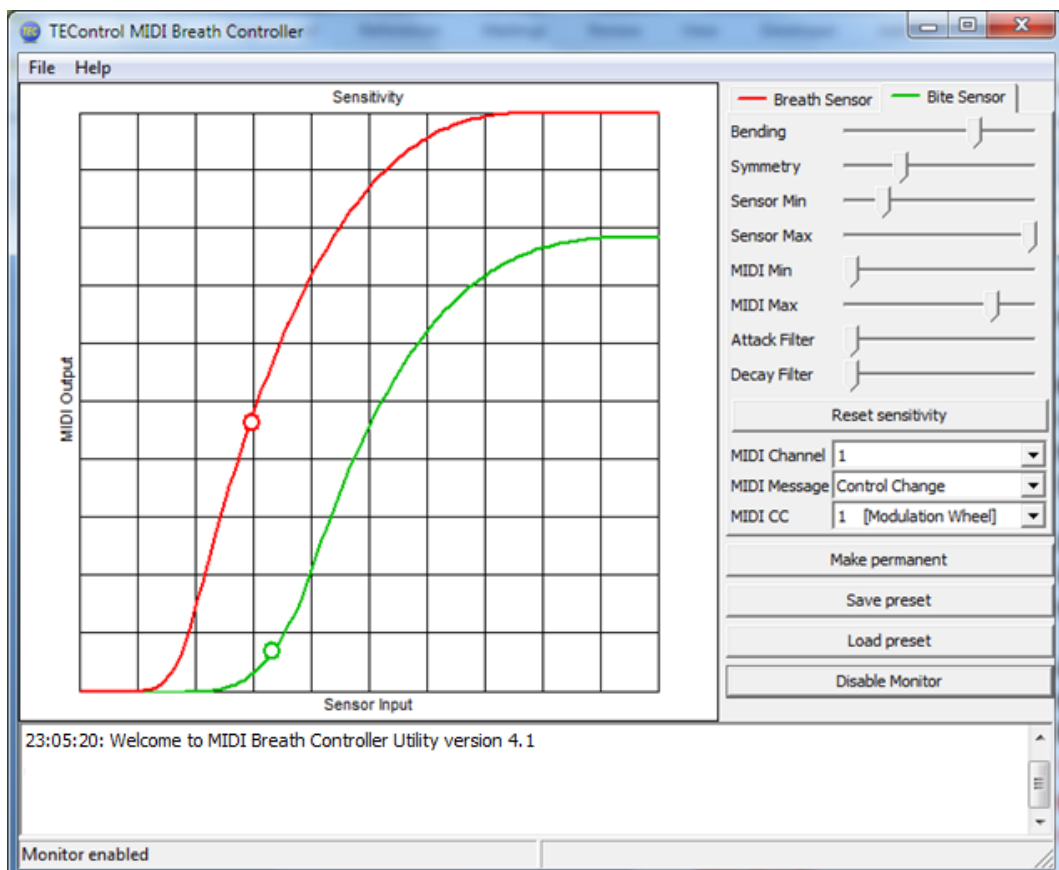
3.1 Installation

The Configuration Utility is required for changing the settings and is available from our support webpage:

<http://www.tecontrol.se/products/usb-midi-breath-bite-controller/support>

Once you have downloaded the software, unzip the file and run the installer (Windows) or drag and drop the application in your favourite location (Mac). On Windows the installer will create a shortcut in the Start menu.

Starting the configuration Utility will show the following window



When started, the Configuration Utility will try to detect the Breath Controller. Upon first use or if not found, the lower portion of the window will display an error message "Error - controller not detected" followed by a suggestion to use the "File->Select controller" menu to select the breath controller.

It has been reported to us that on some Windows installations, the operating system

may report the Breath Controller as “USB Audio Device” instead of “Breath Controller”. For those rare instances, we have added an option “Show all MIDI devices” to the “Select controller” dialog box, which allows listing the correct device.

In your player/sequencer the Breath Controller has to be selected as a MIDI input in order to work. The Breath Controller also appears in the MIDI output list but this should not be selected since the output is used by the Configuration Utility to send configuration messages.

3.2 How to configure

The 8 sliders of each tab allow tailoring the response from sensor input to MIDI value as well as adjusting the attack and decay timer for each controller separately.

- The Bending and Symmetry sliders change the shape of the response.
- The Input Min slider sets the lower threshold of the input signal. Any signal below the threshold will not cause any change in the output CC value, which will remain at the minimum output value.
- The Input Max slider sets the upper threshold of the input signal. Any signal above the threshold will not cause any change in the output CC value, which will remain at the maximum output value.
- The Output Min slider sets the minimum output CC value, which is output when the signal is at or below the lower threshold. This is useful if you don’t want the CC value to drop to zero.
- The Output Max slider sets the maximum output CC value, which is output when the signal is at or above the upper threshold. This is useful if you want to limit the maximum CC value to less than 127.
- The Attack and Decay Filter sliders set the respective time constants individually. Setting the sliders fully left produce the fastest response (filter disabled); setting them fully right allows time constants of several seconds. This is very useful for semi-automatic swells.

Below the sliders there are the following additional controls:

- The Reset sensitivity button resets the sensitivity to linear with full input and output ranges.
- The MIDI Channel drop-down list selects the MIDI channel to be used for the transmission of the MIDI messages.
- The MIDI CC drop-down list selects the actual controller to be used, for example CC1 [Modulation Wheel], CC2 [Breath Control] and so on. The MIDI CC is effective only when Control Change is selected in the MIDI Message drop-down list.
- The MIDI Message drop-down list offers, in addition to the above mentioned Control Change, other MIDI message options such as Aftertouch, Pitch Bend Up, Pitch Bend Down and Pitch Bend Both.
- The Make Permanent button stores the current settings in the Breath Controller’s non-volatile memory so that they are remembered even when the device is removed from the computer. You can use this button as often as you wish.
- The Save Preset button allows storing the current settings in a file anywhere on your computer, for later retrieval.
- The Load Preset button allows to retrieve a previously saved file and apply the settings in it to the breath controller. Note, the file name must end in “.tec” otherwise it will not be possible to select it.
- The Enable/Disable Monitor button enables a circular marker that is displayed along the sensitivity curve and indicates the actual sensor input. This is very useful for tailoring the sensitivity to suit your playing style.

Note that when either Aftertouch or any of the Pitch Bend options are selected the MIDI CC drop down is grayed out. Aftertouch is what the MIDI specification refers to as “channel pressure”. Due to the nature of the sensors used (they both return to minimum signal when left alone), Pitch Bend can only be used in one direction; Pitch Bend Up or Pitch Bend Down. We have, however, also included a Pitch Bend Both mode, where the full function is available and can be tailored to usability with the sensitivity curve.

All changes to the settings take immediate effect but are lost when the computer is powered off or the device is removed from the computer. To store your settings permanently in the device, use the Make Permanent button. This means your settings are remembered when the device is unpowered. You can now move it to another computer with your favorite settings intact.

4 Configuring your DAW and VI

4.1 DAW

In your DAW/player software the breath controller must be selected as a MIDI input device in order to work. In your DAW you must also configure the MIDI input of the track you are playing or recording to "MIDI omni", "All MIDI inputs" or similar function in order to configure the track to respond to all MIDI controllers. This is necessary to allow controlling the instrument from both keyboard and breath controller.

WARNING!!! Due to the nature of the breath and bite controllers the Breath and Bite MIDI signals will be left at the minimum (most commonly zero) value when you release the pressure (i.e. stop blowing). Depending on which CC you are controlling you might then not hear any sound without blowing or biting and it is possible to get deadlocked. For example suppose you first set the breath controller to CC 7 (volume); when you stop blowing your instrument volume will stay at zero value. If you now change the breath controller to some other CC, for example 11 (expression) no sound will be heard even when you blow since CC 7 (volume) is still at zero. Please, keep this in mind before contacting us. To solve the problem either restart your sample player or try the following:

- select the CC that might be left at zero
- while applying pressure change the CC to 1 (mod wheel)
- repeat if you have more CCs left at zero.

4.2 VIs

Just as any other MIDI controller, the MIDI CC sent by the breath controller must be matched to a CC accepted by the VI you want to control.











For example MIDI CC2 (Breath Controller) will have no effect on your instrument if the instrument does not respond to CC2. In this case you have to configure the breath controller to send another CC, for instance CC7 (Volume, most instruments respond to this) or CC11 (Expression, also available in most instruments).

Alternatively you can change the controls of your VI to match the default settings of the breath controller (most VIs allow this, but some don't - most notably EWQL play engine). If you want to control the expression of your VI with breath control, change the VI expression CC control to CC2.

Many VIs have a MIDI learn function for their controls which you can activate and then blow, bite, nod or tilt the breath controller to make the VI assign whatever CC comes from the breath controller to the selected parameter.

4.3 Compatibility

Compatibility has been verified with the following sample libraries:

-  Adagio violas
-  LA Scoring Strings LASS
-  East West Quantum Leap (EWQL)
-  Berlin Woodwinds.
-  Symphobia 1 & 2 and True Strike 1 & 2
-  All instruments, both Kontakt based and SWAM based
-  Omnisphere, Trilian and Stylus RMX
-  Albion
-  Vienna Instrument PRO
-  All instruments

We have not yet found any sample player incompatible with our breath controllers. There are of course many left to be tested and although we cannot guarantee compatibility there is no reason to believe our breath controllers are incompatible with any software implementing the USB-MIDI standards.

5 Declaration of conformity

Supplier's Name: **TEControl AB**

Supplier's Address: **Ragnarsv. 2, 23192 Trelleborg, Sweden**

Supplier's email: info@tecontrol.se

declares that the product **USB Midi Breath & Bite Controller** conforms to the following

EMC:

EN 55022:2010

EN 55024:2010

RoHS:

EN 50581:2012

The product herewith complies with the requirements of the RoHS Directive 2011/65/EU, the EMC Directive 2004/108/EC and carries the CE marking accordingly.

Trelleborg, 19.07.2015



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