Sevilla Soft MIDI Breath Controller MBC1

MBC1 is a device designed for musicians who know the possibilities offered by today's technology, synths, DAWs, MIDI interface ... without sacrificing human contact with the instrument, a real expression, which ultimately gives meaning to the music . All those who play a wind instrument know we're talking about. Clearly, the best way to imitate the expression of a wind instrument in a virtual instrument is blowing, as if the real instrument in question.

MBC1 comes with all the necessary elements for integrated programming and operation, you will not need any additional software to configure your computer, or any driver for its operation, is recognized by any operating system.

MBC1 include:

- 3-digit LED display.
- Indicator 10 LEDs 8 to monitor the air flow and the value of MIDI output. 2 Indicators: MIDI IN, MIDI OUT.
- Rotary knob with push light where everything on the menu is set.

CONNECTIONS:

- DIN MIDI input.
- DIN MIDI output.
- Port USB MIDI Class compliant.
- Sensor input. Here the tube supplying the air flow is connected.

MBC1 can work connected to a computer or can work with a USB-type external power supply and use MIDI out to connect a keyboard / synthesizer. Below we explain the differences.

Setup and operation

When turned on, the first thing that appears is the serial number for about 4 seconds, then appears the last selected preset.

Turning the knob to the right select the next preset and left select above.

P. 1   Number of selected preset.

In going from one preset to another, MBC1 stops sending MIDI messages until we fix it for at least four seconds in one set, or you press the button before that time.

The presets range from 1 to 10. In each of them are set and saved

a number of parameters about how we want to behave.

P. 1 <<>> **P. 2** <<>> **P. 3** <<>> ... <<>> **P.10** <<>> **P. 1** .

If the USB port is connected to a computer, this screen will be shown with **P.**, if it is not connected, it is indicated as **P** without point.

While in this screen, the output value will indicate when the sensor detects changes in the air flow and can display values from 0-127.

To program a particular preset press the button and see its light changes from blue to green and the display shows:

Pro Program preset.

To exit programming and return to the situation before we press the knob.

If we control is turned clockwise, the screen displays the following:

Chn Channel select

If you press, the assigned channel is displayed. Turning change the output channel number with values from **1** to **16**. Press again we set the channel .

The next four menu items are used to indicate which type of MIDI message will be sent:

- **CCh** Control change.
- **CC2** Control change in 14 bits.
- **AFt** Ater touch.
- **PbE** Pitch bend.

The selected message type is indicated by a dot to the right. For example: **CCh.** It indicates the currently selected is control change.

CCh Control change.

Pressing select control change as message type. The display shows that control number is sent. The default is **7** corresponding to the channel volume. Turning change the value between **0** and **127**. Pressing again we set the desired value, the control returns to blue and **CCh.** with dot appears.

Note: Do not use values between 120 and 127 messages as these are not ordinary change control messages are channel mode.

CC2 Control change 14 bits.

Pressing select control change in 14-bit mode. For each sample, two messages are sent, the first number corresponds to the selected control and the most significant part of the value, the second

corresponds to the number +32 control and the least significant part of the value. So, if you select eg CC7, a message to CC7 (MSB) and another CC39 (LSB) is sent.

AFt After touch.

This type of message does not require any additional parameters, to select **AFt.** point appears.

PbE Pitch bend.

As in the previous case, the selection of pitch variation requires no parameters and **PbE.** show a point. During operation on the screen it is represented in decimal the 7 most significant bits of the 14 having the message of change of pitch.

The peak is 127 = +8191

The central point is 64 = 0 Unchanged pitch.

The minimum point is 0 = -8192

After selecting this option is very important to set the two following parameters, low levels (SLO) and high (SUP). Especially SLO to indicate both the point of rest, as the lowest level. This is detailed below.

The following two items are used to set the minimum and maximum values, as well as sensitivity or the force to attack the sensor to achieve those values. By default, all presets are programmed to give a minimum value of 0 and a maximum of 127. And to achieve these values: 0 no airflow and 127 to the maximum pressure supported by the sensor.

SLO Set Lower.

When pressed, the minimum value to send appears , zero by default.

Turning change this value. We can now do three things:

1- Just press again and set the minimum value without airflow.

2- Blow with a specific and pressing force, this indicates that to achieve the indicated value must blow with the same force we just set reference.

3- Exert negative pressure (suction) and press. Reach the minimum value set by sucking in the same way. When no airflow in any way MBC1 sent above the minimum set value. By the nature of the sensor, the range for a negative pressure is much shorter than for a positive.

NOTE: If we had selected pitch bend type of message, this minimum value is not taken into account, the minimum value is always 00 00. But the fact that he selected SLO set the average level of rest (2000H in 14-bit) so before selecting SLO should not blow or suck on the mouthpiece because we are informing MBC1 sensor response when there is no airflow. The usual thing would be now, once the

center point fixed, suck and you press and obtain a margin to pull the pitch down.

SUP Set Upper.

When pressed the maximum value is displayed. The procedure is similar to the previous case. Once the maximum value selected, if we blow with a certain force and pressed simultaneously, the value is set and maximum value is reached with the specified weight.

The final behavior depends on the minimum and maximum values, the minimum is always less than the maximum but the power of the minimum may exceed the maximum, then the device behavior is contrary to the expected normal, that is, to blow more strongly the values are decreasing.

NOTE: If we had selected **pitch bend** type of message, this maximum value is not taken into account, the maximum value is always (03FFF in 14 bits). The range of pitch change values and strength exercise depends on how we defined the minimum levels, central and maximum pitch bend. If, for example, indicate the minimum and Central same level, without blowing or sucking for both changes have only positive pitch from 2000H to 3FFFH.

The following three parameters are related to the response of the sensor on the rise, support and fall. Initially, the three default values are 0. In this case the output value is always the value read by the sensor at every moment. For these parameters the value is expressed in increments of 10 ms, and a value of 100 corresponds to 1 second. The maximum value is 250 = 2.5 seconds.

Atc Attack.

The upstream signal to reach a maximum value will be delayed as long as this value indicates.

SUS Sustain.

The signal will remain up,so long as this value is set, unless a higher value which will continue to rise and remain above the indicated time, which once passed will give start to fall.

rEL Release.

The signal takes to fall from a maximum value so long as the preset value.

During operation, each of these three phases will be indicated with the point of the first digit (attack), the second (sustaining) and third (release).

To illustrate this observe the following graph:
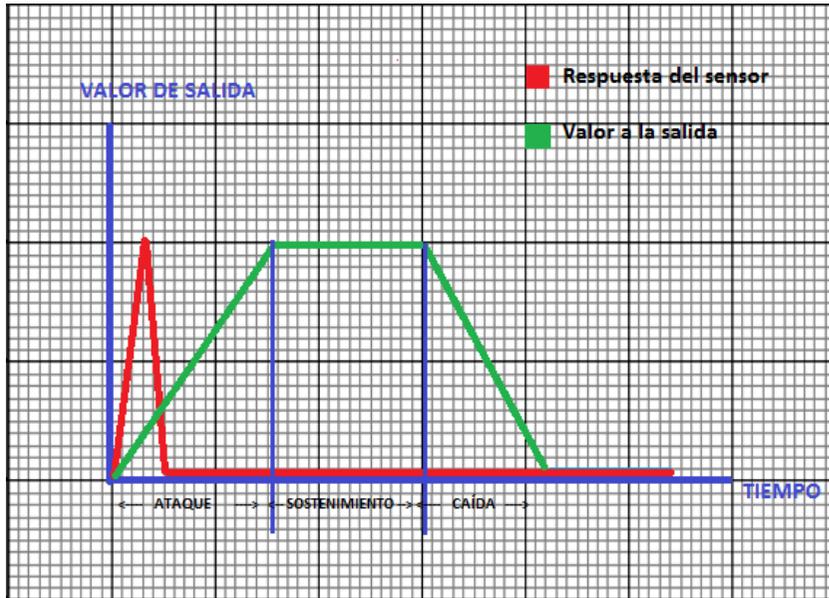
Maybe we need to reduce the number of data, or we may need more frequent sampling. For this indicate how many samples (MIDI messages) sent every second.

SPS   Samples per second.

MBC1 default sends a message every 10 ms (100 samples per second). Clicking on this parameter initially each preset indicates a value of 100. This value can vary between 20 and 200 samples per second according to our needs, that is, we can send messages from every 50 ms to each 5 ms.

Out   Out.

Here we have four options, always referred to when MBC1 is connected to a computer via the USB port. When MBC1 works without a computer, the only way out is the MIDI DIN connector, in this case MBC1 is a MIDI merge, that is, what goes into MIDI IN goes to MIDI OUT mixed with our own MIDI messages.

Pressing the assigned value appears and rotating the command change this value. The default is both, and possible options are:

bot   Both. Messages are sent by both the USB port and the MIDI OUT.

non   None. The messages are not output from any output, MBC1 will behave like a single MIDI USB interface.

USb   USB. Messages are sent only by the USB port.

din   Din. Messages are sent only by the MIDI DIN.

LdF   Load defaults.

Clicking on this menu item the factory settings are restored to the selected preset. The menu returns to the home position indicating the number of preset.

Chn	1	Channel MIDI 1
CCh.	7	Control change volumen
SLO	0	Minimum value 0
SUP	127	Maximum value 127
Atc	0	No attack
SUS	0	No sustain
rEL	0	No release
SPS	100	100 messages per second
Out	bot	USB output and MIDI OUT