Find the extra controls

Changes from official 2.3.4. For Bitbox MkII only. Keep this guide beside your module.

Watch the video overview: **youtu.be/OjgC4UoyOIA**

Feature	Where to find it
Waveform amplitude zoom	Pads: select a loaded pad, then press **INFO** to open its Waveform screen.
Pitch-preserving Speed	From Waveform, press **INFO** again for pad parameters. In **Sample** mode, open **LFO/Spd**; **SPEED** is in the top row, third column.
Screen saver and signal wake	**HOME** to the Menu screen, then **Tools > Disp**.
Double-tap defaults	Numeric dials on pad parameter grids and the Delay/Reverb pages.

Waveform zoom: height and time are independent

Spread two fingers vertically to enlarge the waveform amplitude; pinch vertically to reduce it. The range is **25-3200%** (0.25x-32x). Use less than 100% for loud waveforms, or more than 100% to reveal quiet detail.

Horizontal finger spacing keeps the existing time-axis zoom. A diagonal gesture can change both axes. A stationary **two-finger tap** restores **100% vertical** and the native **horizontal fit** view.

Zoom changes the display only: sample data, volume and playback are unchanged. The scale stays between gestures, but is not stored in presets or across reboot. There is no numeric zoom readout; the reset gives a known reference. Native fit limits still apply to very long samples.

Double-tap a dial to restore its default

Double-tap a numeric dial to reset its **base value** to the native default. For example, **Speed returns to 100%** and **Pitch to 0 semitones**. Modulation sources and amounts stay intact, so modulation may still move the effective value.

Single-tap selection and dragging still work. This gesture applies to numeric dial grids, not list settings or buttons. A drag, long hold, multitouch, another control or a page change cancels a pending double-tap.

Labels and version

Tools now reads **Main / Rec / MIDI / Disp**: the stock **MIDI In** label is shortened to **MIDI**, and **Disp** is new. Sample-mode **LFO** becomes **LFO/Spd**; other modes retain LFO. Version **2.3.4+c** appears at the lower-right of Menu and top-right of Tools.

Speed without pitch change

Sample mode / LFO/Spd / SPEED

Set Speed or modulate it

50% plays at half speed; **100%** uses native playback; **200%** plays at double speed. Drag the SPEED dial or select it and turn its encoder. The full dial sweep covers 50-200%. Live adjustment is supported.

To add modulation, select **SPEED**, then press **INFO**. Use the standard modulation editor to choose sources and amounts, with up to **three** routes. LFO, CV and the available native MIDI sources use their normal routing. The effective Speed is always limited to **50-200%**.

Speed and its modulation routes are saved through the normal preset/pad settings. Old presets without the added value start at 100%. Returning to 100% transitions back to native playback.

One Speed voice, or multiple native Pitch voices

What is already active?	What can play next?
No Pitch or Speed reservation	One voice can acquire Speed, or native voices can acquire Pitch. If a fresh Sample voice requests both, **Pitch takes priority**.
One or more Pitch voices	More native Pitch voices are allowed. **Speed is blocked everywhere.**
One Speed voice	**Pitch is blocked everywhere**, including on that voice. Other voices cannot acquire Speed. Neutral voices can continue normally.

This applies to **voices**, not just pad numbers: additional polyphonic voices on the same pad cannot also stretch. Native Pitch on multiple voices remains available when Speed is free. Stopped pads do not reserve processing.

Keep editing values while busy to prepare a later start. A blocked operation plays at its neutral value: **Pitch 0 semitones / Speed 100%**. Once refused, that operation stays neutral for that playback instance. **Restart it to try again**, even if the resource becomes free meanwhile.

A voice started at neutral can acquire an available operation through a live change. Modulation can keep a reservation through a neutral crossing; setting a dial to neutral does not always release it immediately. Stop the owning voice(s) to make a clean handover.

Read the dial caption

SPDBUSY: another operation owns the resource. **PITBUSY**: Pitch is blocked by Speed. **RESTART**: this playback instance was refused; stop/restart to try again. Requested dial values and modulation are retained.

The new Speed effect is for supported forward **Sample** playback. Clip sync and Granular keep their native algorithms. Reverse/unsupported source or loop setups, loop crossfade and active loop-boundary modulation can fall back to native playback. Other Speed captions identify the relevant condition. The patch does not add multi-voice time stretching.

Let the display rest

Tools / Disp / Scrn saver and Sig wake

Scrn saver: choose the idle timeout

Open **Tools > Disp**, then set **Scrn saver**. The choices are:

Disabled	Minutes
No automatic blanking	1 / 2 / 3 / 5 / 10 / 15 / 30 / 60

The default is **disabled** when no saved preference exists. If you have already chosen a timeout, that saved preference is retained. Changing the timeout starts a fresh idle interval.

After the chosen period of inactivity, the screen turns black. **Audio keeps playing.** It stays blank until a permitted wake event. Your existing brightness returns on wake.

Touch and physical controls: wake only

A touch, HOME/INFO press or encoder movement wakes the screen. That first physical interaction is **consumed** so it cannot accidentally change a parameter. Release the control, then interact normally after the short quiet interval.

Sig wake: optional wake from incoming signals

Choose **Tools > Disp > Sig wake**. Its default is **disabled**. Screen-saver and signal-wake preferences are saved with the normal global settings.

Choice	Behavior
disabled	Only touch and physical controls wake the display.
MIDI	Qualifying MIDI messages received by the native DIN/USB parsers wake the display. MIDI clock and active sensing are excluded.
CV trig	Native rising trigger/gate events wake the display. Held gates, falling edges, continuous CV movement and the separate CLOCK input are excluded.
both	Enable both MIDI and CV-trigger wake.

Enabled signal activity also refreshes the idle timer, so a stream of qualifying events can keep the display awake. The **first MIDI message or CV trigger still performs its normal musical action**; it is not swallowed like a physical wake interaction.

The screen saver is plain black, with no moving graphic. The original brightness control remains unchanged.

Patch, name, install

Use the Bitbox MkII manual for the full firmware-update procedure.

1 / Create the patched file

Back up your entire microSD card, including projects, samples and presets. Open **vwal.github.io/bitbox-mkii-patcher**, download official **2.3.4** from its link, extract the ZIP and select the firmware. Apply the patch, then download the verified result. Patching runs locally in your browser.

2 / Check the exact filename on the card

The patched file must be named exactly **BITBOXMK2.bin** in the SD card root (outside any folder). A duplicate download may become **BITBOXMK2 (1).bin**, **BITBOXMK2 1.bin** or similar. Rename the **patched download** to the exact name before copying it to the card.

3 / Flash and restart

With the module powered off, insert the card containing the patched file. Hold **INFO** while powering on. **Release INFO when the upgrade message appears.** Allow about **30 seconds** and wait for the automatic reboot; leave power on until it finishes. The official manual estimates about 15 seconds, so duration may vary.

After reboot, press **HOME** until the **Menu** screen appears. Confirm **2.3.4+c** in its **lower-right corner**. The version is also shown at the **top-right of Tools**.

Return to official firmware

Replace the patched file in the SD card root with the **original, unmodified official 2.3.4 firmware**, named exactly **BITBOXMK2.bin**. Power off the module and insert the card. Hold **INFO** during power-on; release it when the upgrade message appears. Leave power on for about **30 seconds**, until the automatic reboot. Confirm **2.3.4** on Menu or Tools.

Exact image checksums

The patcher requires both SHA-256 checks to pass. Renaming a file does not change its contents or hash. Other firmware versions and already-patched files are rejected.

Original 2.3.4 - 674,896 bytes

`35ab7995ad0eca8484f3b28bc76389f10b2037dbb21a4a394e950d9329073e86`

Customized 2.3.4+c - 696,708 bytes

`5fce58174b7b76884c0dc9b0dc5eed51975193fb3aa3fe9ed310bd8ce4f1273b`

Manual and author note

Official 1010music Bitbox MkII manual: printed pages 93-94 for updates; page 9 for the Menu version; pages 23-25 for pad navigation. This guide describes the added controls and supplements that manual.

I have tested this modification thoroughly, and it works as intended on my own Bitbox MkII. I am sharing it "as is," without any warranty. You install and use it at your own risk. To the extent permitted by applicable law, I accept no liability for damage to your hardware or loss or corruption of projects, samples, presets or other data arising from its installation or use.