

Blackbox 2 User Guide



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Introduction

Welcome to blackbox 2, a compact, battery-powered desktop sampler and sequencer. Everything you need to build and perform a complete piece — four tracks of instruments, sampling and resampling, a full sequencer, a mixer, and master effects — runs on the device itself, driven by its 4-inch touchscreen.

Blackbox 2 is built around four **tracks**, each of which can be a different kind of instrument: a one-shot pad bank, tempo-synced loops, a pitched multisample, a sliced sample, a granular “shredder,” or an external track that plays outboard gear. You sample into it, sequence it, launch clips live, and arrange the results into songs — then mix and add effects, all in one box.

Feature Highlights

- **Four instrument tracks** — each a One-Shot, Loop, Multisample, Slicer, Shredder, or External track.
- **Sampling and resampling** — record from the audio input or from blackbox 2’s own output, straight into pads, loops, or multisample sets.
- **Sequencing** — step and piano-roll sequencers for every track, live clip launching of sequences and loop groups, and Song mode for arranging scenes.
- **Mixer** — per-track level, pan, mutes, solos, and effect sends, with a master compressor.
- **Master effects** — touch-controlled X/Y performance pads, delay, reverb, and a four-band EQ.
- **MIDI** — play and sequence external instruments over TRS MIDI, and play blackbox 2 from a controller over TRS MIDI or USB.
- **Clock and sync** — lock to MIDI clock or an analog clock for modular and analog gear, or run as the master.
- **USB audio** — stream audio in and out over USB.
- **Portable** — a 4-inch touchscreen, up to 3 hours of battery, and microSD storage for your projects and content.

What's in the Box



What's in the box

- Blackbox 2.
- A microSD card, in the box or pre-installed.
- A USB-C power cable.
- A USB-C Power/Data splitter.
- A quick start guide.

Using This Manual

If you are just getting started, the [Quick Start chapter](#) walks you through setup, powering on, and making your first sounds.

From there, each screen has its own chapter. Most of these chapters describe the screen in three passes:

- **See and Touch** — what is on the screen and how you interact with it by touch.
- **Push** — what the hardware buttons do on that screen.
- **Twist** — what each knob controls.

Reference chapters — the [Hardware Tour](#), [MIDI](#), [Clock & Sync](#), and the [Appendices](#) — collect information that spans the whole device.

Hardware Tour



blackbox 2

Blackbox 2 is a compact, battery-powered desktop sampler and sequencer. Everything you need to build and perform a complete project — four tracks of instruments, a mixer, effects, and full sequencing — runs on the device itself. This chapter identifies every control and connector.

Front Panel



blackbox 2 front panel

The front panel holds the controls you use to play and edit. For how each one works, see the [Navigating the Interface chapter](#).

- **Touchscreen** — 4-inch high-resolution color display; the main interface for selecting, triggering, and editing.
- **Knobs** — four rotary knobs above the screen for adjusting the parameters shown in the knob bar.
- **Buttons** — twelve labeled buttons in two rows, plus four arrow buttons (◀, ▶, ▲, ▼), for moving between screens and controlling playback.

Power Button

Located in the **back right corner** of the unit.

- **Power on** — hold until the button lights turn on.
- **Power off** — hold until the screen goes dark.
- **Battery** — built-in rechargeable; up to 3 hours of play time.
- **Charging** — charges when the PWR/DATA port is connected to a power source. Charging is significantly faster when blackbox 2 is powered off.

Connections



blackbox 2 connections

USB-C Ports

Two USB-C ports power the device and support multichannel USB audio and USB MIDI input.

- **PWR/DATA port** — power, USB audio, USB MIDI input, and Disk Mode. Connect to a 20W or higher USB-C charger to power and charge the unit. Over a USB data connection to a computer, blackbox 2 can:
 - **Receive** one stereo audio signal (appears as an input source for recording or for an External track). Your computer sends audio to **Speakers (blackbox 2)**.
 - **Send** three stereo audio signals mirroring the Audio 1, 2, and 3 outputs. Your computer receives audio from **Microphone (blackbox 2)**.
 - **Receive** MIDI from a computer. Blackbox 2 does not send MIDI over USB.
- **MIDI HOST port** — connects USB MIDI controllers, keyboards, and pad controllers to play and control blackbox 2. This firmware version receives MIDI over USB but does not send it.

TRS Clock

A single 3.5 mm TRS jack carries an analog pulse clock and serves as both clock in and clock out. It can synchronize blackbox 2 to an external tempo source, or drive external devices such as modular gear and analog sequencers from blackbox 2's tempo. The jack supports 1, 2, 4, 8, 12, or 24 pulses per quarter note (PPQ). Set the direction and PPQ rate on the Global Settings screen (see the [Global Settings chapter](#)).

MIDI

- **TRS MIDI In** — 3.5 mm TRS jack. Receives MIDI from controllers and external sequencers. Blackbox 2 auto-detects whether the connected cable uses TRS Type A or Type B, so no configuration is needed.
- **TRS MIDI Out** — 3.5 mm TRS jack. Sends MIDI to external instruments and gear. Each track can be configured to send on a separate MIDI channel, set in Track Configuration. You can choose Type A or Type B output from the Global Settings screen to match your gear.

Audio Outputs

Three stereo outputs on 3.5 mm TRS jacks send blackbox 2's audio to a mixer, audio interface, or amplification.

- **Audio 1** — full master mix with Reverb, Delay, EQ, Compressor, and DJ FX.
- **Audio 2 / Audio 3** — additional outputs for routing individual tracks.
- Each track's output assignment is set in Track Configuration.

Headphone Output

A stereo headphone output on a 3.5 mm TRS jack lets you monitor your mix on headphones. It carries the same signal as Audio 1, plus the metronome.

Audio Input

A stereo input on a 3.5 mm TRS jack brings external audio into blackbox 2.

- Record live audio directly into blackbox 2.
- Route audio from external gear through an External track to apply effects and include it in the mix.
- USB audio from a computer is also available as an input source (see USB-C Ports).

microSD Card Slot

The microSD card holds all projects, patches, samples, and factory content. Blackbox 2 ships with a card either in the box or pre-installed.

- **Insert** with the metal contacts facing down; push until it latches into place.
- **Eject** by pushing the card in until it releases and springs out. The spring is strong — keep a finger ready to catch it.

Always power down blackbox 2 before removing or inserting the microSD card to avoid corrupting data.



blackbox 2 microSD slot

Accessories

- **USB-C Power/Data splitter** — lets you power blackbox 2 separately from the data connection. Use it when the connected device can't supply enough power over a single USB cable, or when a direct USB cable between the two devices introduces audio interference. Plug it into the PWR/DATA port, connect power to the power side (black connector, lightning icon), and run a USB cable from the data side (silver connector, USB icon) to your computer.
- **MIDI adapter cables** — adapt the 3.5 mm TRS MIDI In and Out jacks to standard 5-pin DIN connectors for connecting other MIDI gear.
- **USB-C power cable** — connects the PWR/DATA port to a 20W or higher USB-C charger to power and charge the unit. Not all USB-C cables can carry the full charger wattage; a cable that is not rated for it may charge slowly or fail to power blackbox 2 at all. Use the included cable, or another USB-C cable rated for the full power-delivery wattage. Some cables are marked “no data” and carry power only; if you want a single cable to connect blackbox 2 to an external device for both data and power, make sure the cable supports both.
- **microSD card** — holds all your projects, patches, samples, and the factory content (see The microSD Card, above).

Quick Start

This chapter gets you from the box to your first sounds in a few minutes. Each step is brief; where there is more to learn, it points you to the chapter that covers the topic in full.

Set Up and Power On

Insert the microSD Card

The microSD card holds all of your projects, patches, and samples.

- Insert the card with its metal contacts facing down, and push until it latches into place.
- To eject it later, push it in until it releases and springs out. The spring is strong, so keep a finger ready to catch the card.

Always power blackbox 2 off before removing or inserting the card. See the [Hardware Tour chapter](#) for more on the card slot.

Make Your Connections

- Connect **Audio 1** to your mixer, audio interface, or amplifier for the full master mix, or plug headphones into the headphone output.
- If desired, connect a MIDI controller to the **TRS MIDI In** or the USB-C **MIDI HOST** port to play the tracks from a keyboard or pads.

All of the jacks are described in the [Hardware Tour chapter](#).

Apply Power and Turn On

- Connect the included USB-C power cable from the **PWR/DATA** port to a 20 W or higher USB-C charger. Use the included cable or another USB-C cable rated for the full charger wattage — not all USB-C cables can carry it.
- Press and hold the **power button** in the back right corner until the button lights turn on. To power off later, hold it until the screen goes dark.

The built-in battery charges whenever the PWR/DATA port is connected to power, and charges faster when blackbox 2 is off. The battery icon and percentage appear in the lower right corner of the screen.

Set the Date and Time

Blackbox 2 timestamps the files you record and save, so set its clock the first time you power on.

1. Press **PROJ** three times to reach the Global Settings screen.

2. Press the **Down** arrow until the **Date** row is highlighted, and set the date with the knobs.
3. Press the **Down** arrow again to highlight the **Time** row, and set the time on a 24-hour clock.
4. Tap **Set Time** to save it.

See the [Global Settings chapter](#) for the rest of the device-wide settings.

Check for Firmware Updates

New firmware may be available with bug fixes and new features, so it is worth checking for an update before you dig in.

1. Press **PROJ**. The installed firmware version appears in the lower left corner of the screen.
2. Visit **1010music.com/downloads** and find the latest blackbox 2 firmware version.
3. If the version on the website is newer than yours, update it. The [Updating Firmware chapter](#) walks through the whole process.

Find Your Way Around

Take a moment to learn the controls:

- **Mode buttons** open the main screens: **TRACKS**, **LAUNCH**, **SONG**, **MIXER**, **FX**, and **PROJ** along the top, and **INST**, **SEQ**, and **SCENE** below. On some mode buttons, pressing again reaches further views.
- **Transport buttons** — **REC**, **STOP**, and **PLAY** — control recording and playback.
- **Arrow buttons** — Left and Right move the selection; Up and Down switch the knob focus.
- **Touch** the screen to select and trigger; swipe and pinch to scroll and zoom.
- **Knobs** adjust the parameters in the highlighted row of the knob bar.

The [Navigating the Interface chapter](#) covers all of this in detail.

Load and Play a Project

A project is a complete snapshot of a session — all four tracks, the mixer, the effects, your sequences, and your songs.

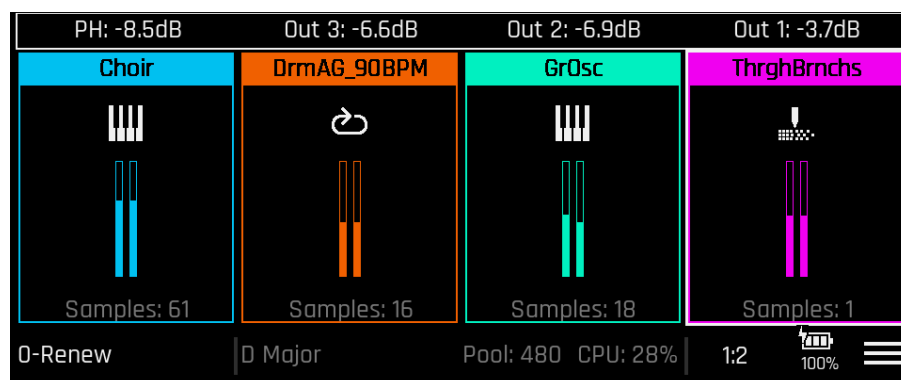


The Project Browser

1. Press **PROJ** to open the Project Browser.
2. Touch a project in the list to select it, or double-tap it to load it directly.
3. Touch **Load** to open the selected project.
4. Press **PLAY** to start playback and **STOP** to stop.

See the [Working with Projects chapter](#) for saving, copying, and organizing projects.

Play a Track



The Tracks screen

1. Press **TRACKS** to see all four tracks.
2. Touch a track to select it.
3. Press **INST**, or double-tap the track, to open its playing screen — a pad bank, a piano keyboard, or a slice grid, depending on the track type.
4. Touch the pads, keys, or slices to play the instrument.

You can also play a track from a MIDI controller. The projects on the included microSD card map track 1 to MIDI channel 1, track 2 to channel 2, and so on, so set your controller to the channel for the track you want to play. See the [MIDI chapter](#) for the full mapping and how to change it.

Each track type has its own chapter (One-Shot, Loop, Multisample, Slicer, Shredder, and External) with the full story on playing and editing it.

Shape the Sound

- Press **INST** a second time to open the track's dashboard, where you edit its sound settings. Each track type's chapter covers its dashboard in full.
- Press **MIXER** to set track levels, panning, mutes, solos, and effect sends. See the [Mixer chapter](#).
- Press **FX** to reach the X/Y pads, Delay, Reverb, and EQ. See the [FX Screens chapter](#).
- To change the instrument on a track, double-tap an empty track (or use the Tracks menu) to open the Patch Browser, pick a patch, and touch **Load**. See the [Working with Patches chapter](#).

Save Your Work

Blackbox 2 does **not** save automatically. If you load another project or power down without saving, your changes are lost.

1. Press **PROJ** to open the Project Browser.
2. Touch **Save** to write your changes back to the current project, or **Save As** to keep the original and save under a new name.
3. To start fresh, touch **New** and name the new project.

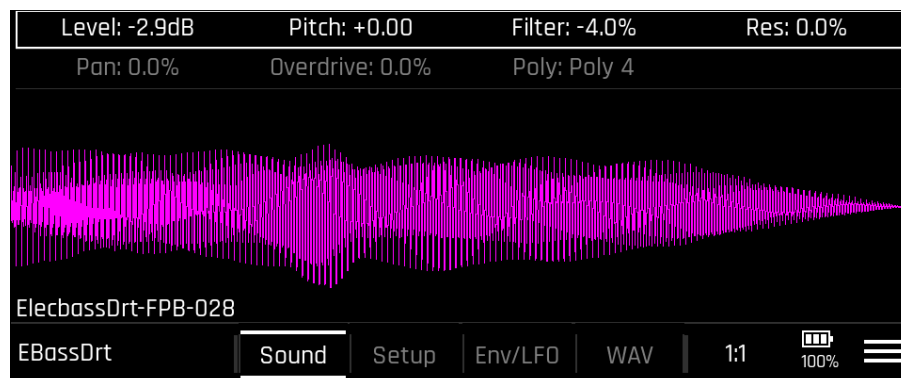
Where to Go Next

- **Sequencing** — build patterns on the step and piano-roll sequencers.
- **The Launch Screen** — trigger sequences and loop groups live.
- **Song Mode** — arrange scenes into a song.
- **Working with WAV Files** — record and edit your own samples.
- **Updating Firmware** — keep blackbox 2 current.

Navigating the Interface

Blackbox 2 is driven by the touchscreen, four knobs, and the buttons around the screen. This chapter explains how those controls work and how to move between screens. For the physical layout and a photo of each control, see the [Hardware Tour chapter](#).

The Screen



blackbox 2 screen regions

Most screens share the same three regions:

- **Knob bar** — a strip along the top with a label for each of the four knobs. The labels change from screen to screen.
- **Main area** — the central region where content is shown and edited.
- **Toolbar** — the row along the bottom (see The Toolbar, below).

Touch Gestures

Gesture	Action
Tap	Select an item, or trigger it — depending on the screen. Also used to operate view selectors, menus, and buttons.
Double-tap	Open the selected item (on screens where a tap does not trigger).
Swipe	Scroll through a list or across a waveform.
Pinch	Zoom in and out on a waveform.

Selecting and Triggering

What a tap does depends on the screen:

- On screens where tapping plays something — the pad bank, the keyboard, the slice grid — a **tap triggers** the item.
- On screens where tapping does not play anything — Tracks, Launch, Mixer — a **tap selects** the item and a **double-tap opens** it.

The selected item is shown with a **white frame** around it.

Your track and pad selection persists as you move between modes, so the track you select on the Tracks screen stays selected when you switch to SEQ, MIXER, or any other screen.

The Knobs

Turn a knob to adjust the parameter labeled directly below it in the knob bar.

When a screen has more than one row of labels:

- Tap in the knob bar to toggle the selected row, or press the up/down buttons to move the knob focus.
- The focused row is highlighted with a white frame.

The Buttons

The buttons are arranged in two rows.



blackbox 2 front panel

Overview and Detail

In the first three columns, the top button opens an overview and the button directly below it drills into the item you have selected there:

Overview (top button)	Detail (button below)
TRACKS — all four tracks	INST — play the selected track’s instrument
LAUNCH — every sequence and loop group	SEQ — edit the selected sequence
SONG — all scenes	SCENE — edit the selected scene

Other Mode Buttons

The remaining top-row buttons each open their own screen:

- **MIXER** — track levels, mutes, solos, and FX sends.

- **FX** — the X/Y performance pad, Delay, Reverb, and EQ.
- **PROJ** — browse, open, save, and create projects.

Press a mode button again for more. Many mode buttons reveal additional views or features on a second press.

Transport Buttons

REC, STOP, and PLAY make up the transport:

- **REC** — press REC + PLAY together to start recording.
- **STOP** — stop playback.
- **PLAY** — start playback.

Arrow Buttons

Four buttons labeled **<**, **>**, **^**, and **v**:

- **< and >** (Left and Right) — change the selected track, pad, or sequence. On the Multisample dashboard they step through the WAV files in the multisample set.
- **^ and v** (Up and Down) — shift the knob bar focus when more than one row of labels is shown, or scroll within a sequence.

The Toolbar

The toolbar runs along the bottom of the screen and is divided into three areas:

- **Left edge** — a context label showing what you are currently editing.
- **Middle** — status displays, view selectors, and buttons for the current screen.
- **Right side** — the clock display and the battery level. **Tap the clock display to open the Tempo pop-up.**
- **Menu** — a menu icon at the far right opens a menu of actions for the current screen or selected item, such as saving or changing a patch, configuring a track, renaming, or cutting, copying, and pasting. Tap an action to run it, or tap elsewhere to close the menu.

Working with Projects

Overview

A *project* is the top-level container for everything you do on blackbox 2. Each project holds:

- All four tracks, including the patch and samples loaded on each one.
- Every sequence and scene you have built.
- The mixer levels, panning, and bus assignments.
- The send levels and parameters for the delay, reverb, EQ, and X/Y FX.
- The MIDI and modulation settings tied to the project.
- The project's name and its last-modified date.

Projects live as folders on the microSD card. Every project is a complete snapshot of a session, so you can hop between projects to switch quickly between performance setups, song ideas, or sound-design experiments.



The Project Browser

The Project Browser is where you load, save, and manage your projects, and where you reach the Project Settings, Global Settings, microSD Mode, and legacy-import tools.

Changes to a project are not saved automatically. If you change a parameter, swap a patch, or edit a sequence and then load a different project or power down blackbox 2, your changes are lost unless you save first.

See and Touch

Press the **PROJ** button to open the Project Browser from any screen.

The screen is divided into these regions, top to bottom:

- **Knob bar** along the top.

- **Project list** filling most of the screen, showing every project on the card by name, with a scroll bar across the bottom of the list.
- **Modified:** line just below the project list, showing when the selected project was last saved.
- **Toolbar** along the bottom with the **Save**, **Save As**, **New**, and **Load** buttons and the menu icon at the far right. The lower-left corner shows the current firmware version.

When you open the Project Browser, the currently loaded project is highlighted by default.

- Touch a project name to select it. The **Modified:** line updates to show when that project was last saved.
- Swipe the list to scroll through it.
- Double-tap a project name to load it directly.

Saving the Current Project

The **Save** button writes your changes back over the currently loaded project, keeping its name. Touch **Save** in the toolbar.

Save is enabled only when the current project has unsaved changes. If everything is already saved, the button is disabled.

Saving Under a New Name

Use **Save As** to keep your current work and write it out as a new project, leaving the original on the microSD card untouched.

1. Push **PROJ** to open the Project Browser.
2. Touch **Save As** in the toolbar. The naming keyboard opens with a suggested name based on the current project name.
3. Edit the name and touch **Enter**.

Blackbox 2 saves the current state under the new name, which becomes the loaded project.

Loading a Project

1. Push **PROJ** to open the Project Browser.
2. Save the current project first if you want to keep your changes (see Saving the Current Project).
3. Select the project you want to load.
4. Touch **Load** in the toolbar.

Blackbox 2 loads the project and takes you to the main track screen. Any unsaved changes in the current project are discarded when the new project loads.

Creating a New Project

The **New** button starts a fresh, empty project with default settings.

1. Push **PROJ** to open the Project Browser.
2. Touch **New** in the toolbar. The naming keyboard opens with a suggested name for the new project.
3. Edit the name and touch **Enter**.

Blackbox 2 creates the new project on the microSD card, loads it, and takes you to the main track screen.

Each project lives in its own folder on the microSD card at Projects\<project name>. That folder holds project.xml — the file that stores all of the project's settings — along with any samples you record into the project. Each multisample set gets its own subfolder, Projects\<project name>\<set name>, so its WAV files stay together.

The Menu

Touch the **menu** icon at the far right of the toolbar to open the Project Browser's menu:

- **Glob Settings**
- **Proj Settings**
- **microSD Mode**
- **Pack**
- **Delete**
- **Clean**
- **Import**

Glob Settings

Opens the Global Settings screen, where you set the preferences that apply across every project: clock source, MIDI channels, audio output routing, screen brightness, and so on. Changes you make here are saved in bb2-stng.mml on the microSD card and apply to all projects, not to the loaded project alone. See the [Global Settings chapter](#) for the full description.

Proj Settings

Opens the Project Settings screen, where you set the preferences that belong to the loaded project: tempo, time signature, swing, project clock settings, and

similar per-project options. Changes you make here are saved when you save the project. See the [Project Settings chapter](#) for the full description.

microSD Mode

Puts blackbox 2 into USB Mass Storage mode so your computer can read and write the contents of the microSD card directly over the PWR/DATA port. This is the easiest way to copy projects and samples on and off the card without removing it from the unit.

1. Push **PROJ** to open the Project Browser.
2. Plug a USB-C cable from the PWR/DATA port into your computer.
3. Touch the **menu** icon, then **microSD Mode**.

You may be asked to save changes and to confirm that you want to enter microSD mode.

While blackbox 2 is in microSD mode, the card appears as a removable disk on your computer, and the other blackbox 2 functions are not available until you leave. To leave microSD mode, eject the disk on your computer and then press the **Left arrow** button.

Pack

Packs the currently loaded project into a self-contained folder so you can move it to another microSD card or share it without losing any of the samples or patches it depends on. Pack copies every WAV file and patch the project references into the project's own folder, then rewrites the references to point at those local copies.

1. Push **PROJ** to open the Project Browser.
2. Touch the **menu** icon, then **Pack**.

Blackbox 2 shows a *Packing...* popup while it copies the files. When the popup disappears, the project is fully packed and ready to move.

Delete

Removes a project from the microSD card. Delete operates on the project you have selected in the list, not on the currently loaded project.

1. Push **PROJ** to open the Project Browser.
2. Touch the project you want to delete in the list.
3. Touch the **menu** icon, then **Delete**. Blackbox 2 asks you to confirm:
Delete Project? *project name*
4. Touch **OK** to delete the project, or **Cancel** to back out.

Deleting a project is permanent. There is no Undo, so be sure you have a backup if there is any chance you might want it back.

Clean

Cleans the currently loaded project by deleting any sample files in the project's folder that no longer have anything pointing at them. Over time, as you swap samples in and out of a project, its folder can build up stale files that take up space without serving any purpose. Clean tidies those up. This also deletes any files you recorded into the project that are not used in any of the tracks.

1. Push **PROJ** to open the Project Browser.
2. Touch the **menu** icon, then **Clean**.

Blackbox 2 shows a *Cleaning...* popup while it scans the project's folder and removes the orphaned files. Clean operates only on the loaded project; to clean another, load it first.

Import

Imports projects from a legacy 1010music blackbox card so you can use them on blackbox 2. Import scans the inserted microSD card for blackbox 1 presets and converts each one into a blackbox 2 project.

Note: Import overwrites any blackbox 2 project whose name matches a blackbox 1 preset on the card. If you have a blackbox 2 project you want to keep, rename it with **Save As** before you import.

1. Insert the microSD card from your blackbox 1.
2. Power up blackbox 2.
3. Push **PROJ** to open the Project Browser.
4. Touch New to create a new project.
5. Touch the **menu** icon, then **Import**. Blackbox 2 shows the Import screen with a list of the presets it found on the card.
6. Touch the preset you want to import to select it.
7. Touch **Import** on the Import screen. Blackbox 2 asks you to confirm:
Import overwrites project *preset name* if it exists.
8. Touch **OK** to start the import, or **Cancel** to back out.
9. After the import is complete, copy the new Project files from the old blackbox 1 microSD card to your blackbox 2 microSD card.

While the import runs, blackbox 2 shows an *Importing...* popup with the name of the preset it is currently working on. The import can take several minutes if the preset uses many large files.

If blackbox 2 cannot import the preset, it stops the import and shows you the name of the preset that failed. Touch **OK** to acknowledge the error and return to the Project Browser.

How blackbox 1 cells map to tracks. A blackbox 1 preset can use up to sixteen pads of mixed types, but blackbox 2 has only four tracks. During import, the cells are grouped into tracks like this:

- All **one-shots** are combined into a single track.
- All **loops** are combined into a single track.
- Each **multisample** gets its own track.
- Each **slicer** gets its own track.
- Each **granular** cell gets its own track.

If the preset needs more than four tracks, the importer keeps the higher-priority types and drops the rest, removing the lowest-priority types first in this order: granular, then slicer, then multisample, then loops, then one-shots. One-shots and loops are the most likely to survive; granular cells are dropped first.

How sequences are converted. Each blackbox 1 sequence is remapped to the new track layout. The importer groups the sequence's events by which track their target pad landed on, then creates one blackbox 2 sequence per track, translating the old pad numbers into the new instrument positions.

What is migrated and what is skipped. Most parameters carry over unchanged, because blackbox 1 and blackbox 2 share the same names for them. The importer skips:

- Empty templates.
- Song sections.
- Sequence events that point at cells that were not imported.

Push

- **PROJ** opens the Project Browser from any screen. Press PROJ again to jump to Project Settings, and a third time for Global Settings — a quick way to reach either without the menu.
- The **up and down arrow buttons** select a project in the list, moving the selection one project at a time.

Twist

- Turn the leftmost **Page** knob to scroll the project list one full page at a time.

- Turn the rightmost **Line** knob to step the selection through the list one project at a time. The selection wraps between columns when it reaches the top or bottom of a column.

Sharing Projects with Bento

Blackbox 2 and bento use the same project and patch file formats, so their files can be moved between the two devices on a microSD card. Bento supports some track types that are not supported by blackbox 2, so a project does not always carry over completely.

- **bento** can open a blackbox 2 project directly. A blackbox 2 project uses four tracks and bento has eight, so it loads with those four tracks and bento's remaining slots empty.
- **blackbox 2** can open a bento project too, but it loads only the first four tracks. Any tracks of a type blackbox 2 does not support are left empty.

Because of this, opening a bento project on blackbox 2 is not round-trip safe. If you save that project on blackbox 2 and take it back to bento, the tracks past the fourth and any unsupported track types are gone — they are no longer in the project file. Keep a backup of the original bento project if you want to preserve it.

Patches for the track types both devices support are interchangeable; see the [Working with Patches chapter](#).

The Tracks Screen

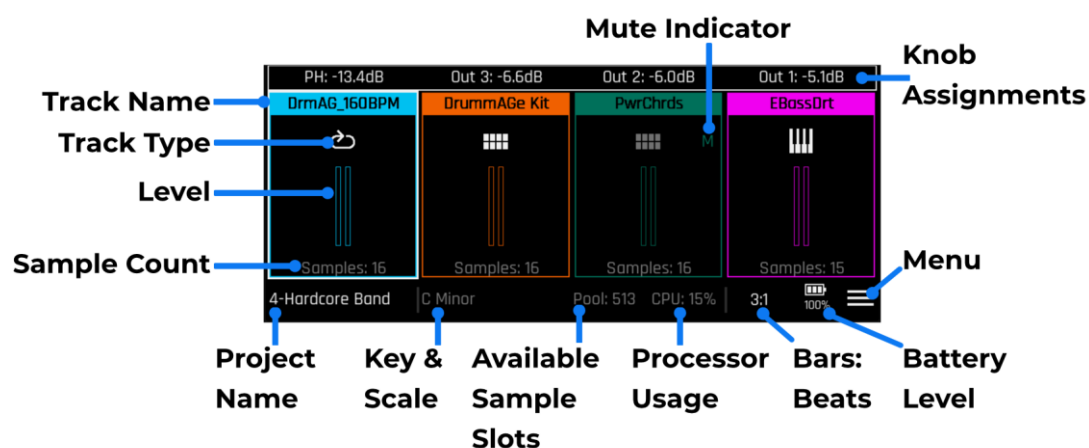
The Tracks screen is the home base of blackbox 2. It is where you see all four of your tracks at a glance, switch between them, and reach the controls that affect the project as a whole. Every other screen on blackbox 2 either drills into one of these tracks or sits above them.

From the Tracks screen you can:

- See the name, type, sample count, and live audio level for every track in your project.
- Pick which track is the *selected* track. The selection follows you to every other screen that has a track context, so what you edit on the INST, SEQ, or LAUNCH screens generally applies to the track you picked here.
- Set the output levels for the headphone jack and the three audio outs.
- Watch the project's sample pool, CPU load, and current key and scale at a glance.
- Add a new track to an empty slot.
- Save, change, rename, configure, cut, copy, and paste tracks from the menu.

You can reach the Tracks screen at any time by pressing the **TRACKS** button on the button strip.

See and Touch



Tracks Screen

KNOB BAR

The four knobs along the top set blackbox 2's output levels (see Twist, below). They are arranged in the same order as the physical output jacks on the back of the unit, so the rightmost knob lines up with the rightmost jack.

TRACK GRID

The main part of the screen is a row of the four tracks. The selected track is shown with a white frame.

- **Touch a track** to select it.
- **Double-tap a track** to open it.

Each populated track shows:

- A colored header band with the **track name** in it. Each track has its own color that blackbox 2 uses to identify that track across every other screen.
- An **icon** indicating the track type — one-shot, loop, slicer, multisample, shredder, or external.
- A pair of **VU meters** showing the live audio level for the track's left and right channels.
- A **Samples:** count showing how many samples are loaded on the track. External tracks show 0 because they carry no samples of their own.
- An **M** badge in the corner if the track is muted, or an **S** badge if it is soloed. A muted track is dimmed to show it is not being heard. Likewise, when any track in the project is soloed, the other tracks dim to show they are not being heard.

An empty track is drawn blank, with no header band, icon, or meters.

TOOLBAR

The toolbar along the bottom shows status on the Tracks screen. From left to right it shows the **project name** of the currently loaded project, the **key and scale** (for example *C Minor*), **Pool: N** (the number of sample slots still available in the project's sample pool, out of a maximum of 576), **CPU: N%** (the current audio-engine CPU load), the current **bars:beats** position, and the **battery** level. The menu icon sits at the far right.

Keep an eye on the **CPU** readout as your project grows. If it runs too high, the audio engine can produce artifacts such as glitches or dropouts, so reduce the load — fewer voices or lighter effects — before it maxes out.

While the project is loading samples, the **Pool** slot temporarily reads *Loading* or *Load N* (where N is the number of pending sample loads); while saving a patch, it reads *Saving....* A patch may not play properly until loading finishes, since some of its samples may not be in memory yet.

Push

- **Left / Right** — step the selection through the tracks. The selection stops at the ends of the row rather than wrapping.

- **INST** — opens the selected track (the same as double-tapping the track).
On an empty slot, INST opens the Patch Browser to add a track.

Selecting a track here makes it the current track on the other screens, though some screens can change it on their own — for example, picking a sequence or loop group from a different track on the Launch screen switches the context to that track. Opening a track takes you to its first INST screen, where you can play the instrument associated with that track.

Twist

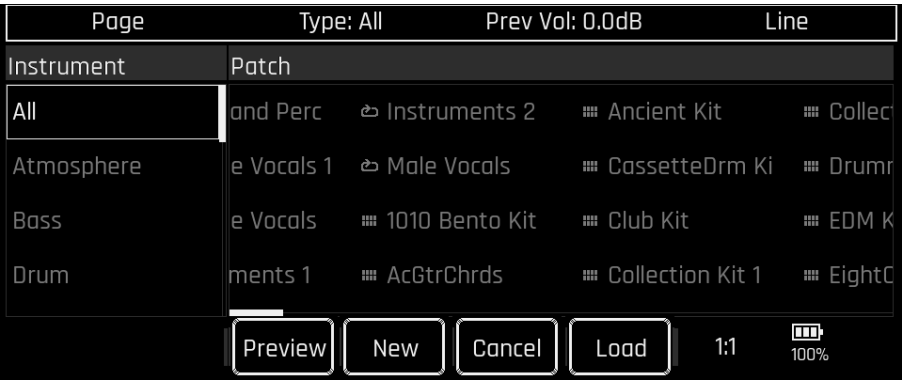
Turn the knobs in the knob bar to set the output levels.

Parameter	Description and Range
PH	Headphone output level. Range: -60 dB to 0 dB.
Out 3	Level for audio output 3. Range: -60 dB to +6 dB.
Out 2	Level for audio output 2. Range: -60 dB to +6 dB.
Out 1	Level for audio output 1. Range: -60 dB to +6 dB.

Adding a New Track

To turn an empty track slot into a working track:

1. Touch the empty track, or select the empty slot with the arrow buttons and press **INST**.
2. Blackbox 2 opens the Patch Browser. Pick a patch to load, or touch **New** to start a fresh patch of any type. See the [Working with Patches chapter](#) for the details.



The Patch Browser

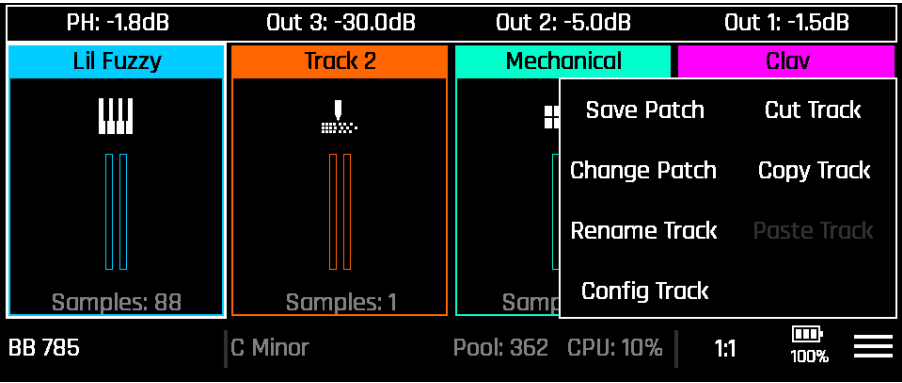
Once you finish in the Patch Browser, blackbox 2 returns you to the first INST screen for the new track type.

The Menu

Touch the menu icon at the far right of the toolbar to open the Tracks screen’s menu. The menu has these items:

- **Save Patch**
- **Change Patch**
- **Rename Track**
- **Config Track**
- **Cut Track**
- **Copy Track**
- **Paste Track**

The items operate on the currently selected track. Blackbox 2 grays out the items that do not apply to that track at the moment — for example, every item except **Paste Track** is grayed out when the selected track is empty, **Save Patch** is grayed out for external tracks, and **Paste Track** is grayed out unless you have already cut or copied a track.



The Tracks Menu

Save Patch

Saves the selected track's current setup — its sample list, its patch parameters, and the patch's tags — as a patch on the microSD card. You can load the saved patch onto any track in any project later from the Patch Browser. Patches you save are stored as **User** patches; saving never replaces the factory patches that ship with blackbox 2.

1. Press the **TRACKS** button on the button strip.
2. Touch the track you want to save.
3. Touch the menu icon to open the menu.
4. Touch **Save Patch**. The naming keyboard opens with the track's current name as the suggested patch name.
5. Edit the name and touch **Enter**. Blackbox 2 opens the Patch Tagger screen so you can pick the tags for the new patch.
6. Pick the tags you want and touch **Save** on the Patch Tagger to finish.

Save Patch is grayed out when the selected track is empty or when the selected track is an external track, since external tracks have no patch content of their own to save.

Change Patch

Opens the Patch Browser so you can swap the current patch on the selected track for a different one. See the [Working with Patches chapter](#) for the full set of operations available there.

1. Press the **TRACKS** button on the button strip.
2. Touch the track whose patch you want to change.
3. Touch the menu icon to open the menu.
4. Touch **Change Patch**. The Patch Browser opens.
5. Select the patch you want in the Patch list.
6. Touch **Load** to load it onto the track. (You can also double-tap a patch to load it directly.)

If the new patch's type is compatible with the track's original type, any sequences on the track stay untouched, so your existing patterns keep playing through the new sound. If the types are not compatible, the sequences may not carry over.

Change Patch is grayed out when the selected track is empty, because there is nothing to change. Touch the empty track directly to start adding a patch instead.

Rename Track

Renames the selected track. The new name appears in the colored header band of the track on the Tracks screen and on every other screen that shows the track name.

1. Press the **TRACKS** button on the button strip.
2. Touch the track you want to rename.
3. Touch the menu icon to open the menu.
4. Touch **Rename Track**. The naming keyboard opens with the track's current name.
5. Edit the name and touch **Enter**.

Renaming a track does not change the underlying patch. If you want the rename to follow the patch into other projects, save the patch with **Save Patch** afterwards.

Config Track

Opens the Track Configuration screen for the selected track. From there you can set per-track options of output bus assignment, MIDI In Channel and MIDI Out channel. You can also configure sidechain ducking here. See the [Track Configuration chapter](#) for the full description.

1. Press the **TRACKS** button on the button strip.
2. Touch the track you want to configure.
3. Touch the menu icon to open the menu.
4. Touch **Config Track**.

Press the **TRACKS** button when you are done to return to the Tracks screen.

Cut Track

Removes the selected track from its slot and copies it to the clipboard so you can paste it somewhere else. The original slot becomes empty.

1. Press the **TRACKS** button on the button strip.
2. Touch the track you want to cut.
3. Touch the menu icon to open the menu.
4. Touch **Cut Track**.

The clipboard holds one track at a time. Cutting or copying another track replaces what was on the clipboard.

Cut Track is grayed out when the selected track is empty.

Copy Track

Copies the selected track to the clipboard, leaving the original track in place.

1. Press the **TRACKS** button on the button strip.
2. Touch the track you want to copy.
3. Touch the menu icon to open the menu.
4. Touch **Copy Track**.

Like cut, copy replaces whatever was previously on the clipboard.

The clipboard carries the complete track: the patch type, all INST settings, the sample file assignments, and any sequences recorded for the track. You can copy a track from one project, open a different project, and paste the track there.

Copy Track is grayed out when the selected track is empty.

Paste Track

Pastes the track on the clipboard into the selected slot. If the slot was already populated, the existing track is replaced.

1. Press the **TRACKS** button on the button strip.
2. Touch the slot where you want to paste the track.
3. Touch the menu icon to open the menu.
4. Touch **Paste Track**.

The pasted track includes the original INST settings, sample file assignments, and sequences. Pasting into a different project works the same way: open the destination project, select the slot, and paste.

Paste Track is grayed out unless you have something on the clipboard from a previous Cut Track or Copy Track.

The Track Configuration Screen

The Track Configuration screen is where you set the audio and MIDI routing for a track. The track's instrument-specific settings — pad sounds, envelope, filters, slice points, and so on — live on the track's own Dashboard screens. Configuration covers the routing of the instrument: which output bus its audio goes to, what MIDI channels it sends and receives on, and its sidechain ducker. (Which input a track records from, and at what gain, lives on the record screens — see Input and Input Gain, below.)

Reaching the Screen

You reach Track Configuration from the Tracks screen's menu:

1. Press the **TRACKS** button on the button strip.
2. Touch the track you want to configure.
3. Touch the **menu** icon at the far right of the toolbar.
4. Touch **Config Track**.

Press the **TRACKS** button to return to the Tracks screen when you are done.

The Knob Bar

The screen stacks the track's **configuration rows** at the top and the **Sidechain** section below them. Tap a row to switch the knobs to it, or press the **Up** and **Down** arrow buttons on the button strip to step through all of the rows. The **Left** and **Right** arrows move to the previous or next track, skipping empty slots, so you can configure several tracks without leaving the screen.

The selected row is drawn with a white frame around it, the same way selection is shown everywhere else on blackbox 2.

A track's configuration fits a single row of knobs, whose parameters depend on the track type; the **Sidechain** rows below are the same for every track. The sections below cover each track type's configuration layout, and **Sidechain** covers the ducker.

One-Shot Tracks

Parameter	Description and Range
Output	Output bus the track's audio is routed to. Options: 1, 2, 3.

Parameter	Description and Range
Pad Rec	Turns MIDI-triggered recording on or off. When on, MIDI notes 68 and higher received on the track's MIDI In Chan are used for MIDI-triggered recording; when off, those notes are ignored, so you can play freely without accidentally recording if you are an octave too high. Options: Off, On.
MIDI In Chan	MIDI channel the track listens on. Options: None, or 1 through 16.
MIDI OutCh	MIDI channel the track sends out on. Options: None, or 1 through 16.

Multisample, Slicer, and Shredder Tracks

These three pitched track types share one layout. They have no **Pad Rec** knob — MIDI-triggered recording is a one-shot and loop feature.

Parameter	Description and Range
Output	Output bus the track's audio is routed to. Options: 1, 2, 3.
MIDI In Chan	MIDI channel the track listens on. Options: None, or 1 through 16.
MIDI OutCh	MIDI channel the track sends out on. Options: None, or 1 through 16.

Loop Tracks

Parameter	Description and Range
Output	Output bus the track's audio is routed to. Options: 1, 2, 3.

Parameter	Description and Range
Pad Rec	Turns MIDI-triggered recording on or off. When on, MIDI notes 68 and higher received on the track's MIDI In Chan are used for MIDI-triggered recording; when off, those notes are ignored, so you can play freely without accidentally recording if you are an octave too high. Options: Off, On.
MIDI In Chan	MIDI channel the track listens on. Options: None, or 1 through 16.

Loop tracks have no **MIDI OutCh** knob.

External Tracks

External tracks allow you to integrate external gear into your music. They can send MIDI to an external device, and they can bring in audio from the outboard instrument to include in FX and the final mix. There are two rows of knobs.

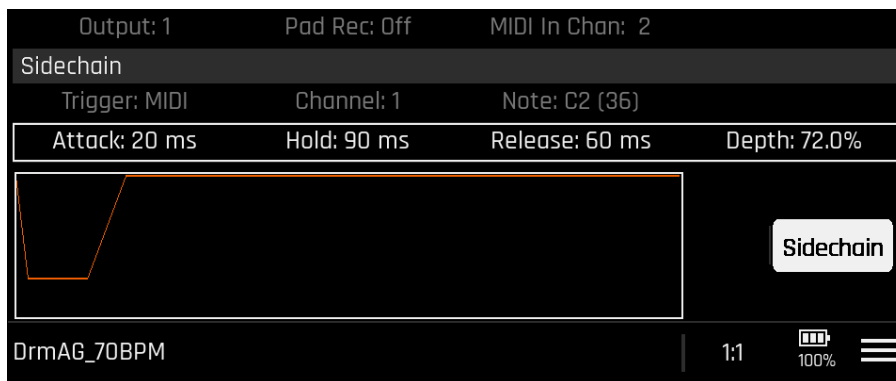
Parameter	Description and Range
Output	Output bus the track's audio is routed to. Options: 1, 2, 3.
Input	Audio input that receives the outboard instrument's return feed. Options: In 1 (the stereo audio in jack), USB (the USB audio in), In 1L (just the left side of the audio input), USB L (just the left side of USB audio).
MIDI In Chan	MIDI channel the track listens on. Options: None, or 1 through 16.
MIDI OutCh	MIDI channel the track sends to the outboard instrument. Options: None, or 1 through 16.

Sidechain Compression

Every track has a **sidechain ducker**: it dips the track's own level when a trigger fires and then lets it recover — the classic pumping or ducking effect, such as

ducking a pad or bass whenever the kick hits. The Sidechain section sits below the configuration rows and has its own two knob rows, an envelope graph, and a **Sidechain** on/off button.

See and Touch



Track Config, Sidechain

- The **Sidechain** header bar separates the ducker from the configuration rows above. Its text turns **white** when a sidechain row is selected and is light gray when a configuration row is selected.
- The **envelope graph** shows the duck shape — the dip down over the Attack, the Hold at the bottom, and the Release back up — with a playhead that sweeps across each time the ducker triggers. The graph line is **dark gray when the sidechain is off**.
- Tap the **Sidechain** button, at the lower right, to turn the ducker on or off.
- Tap the graph to move the knobs to the envelope row, or use the **Up / Down** arrows to step through the rows.

Twist

The ducker uses two knob rows.

Trigger row

Parameter	Description and Range
Trigger	What fires the duck. Options: Track, Pad, Clock, Audio, MIDI. The second and third knobs change with this choice (see below); the fourth knob is unused on this row. The Pad option is only available in projects that include a one-shot track.

Track and Audio triggers fire when their source crosses a **Threshold**; Pad, Clock, and MIDI triggers fire on each event. The second and third knobs depend on the **Trigger**:

Trigger	Knob 2	Knob 3
Track	Source — the track whose audio keys the duck (Track 1–4).	Threshold — the level that track must cross to fire (0 to 100%).
Pad	Source Track — the track that holds the pad (Track 1–4). Only one-shot tracks will be listed here.	Source Pad — the pad that fires the duck (Pad 1–16).
Clock	Division — how often the clock fires it (1/16, 1/8, 1/4, 1/2, 1/1).	<i>(unused)</i>
Audio	Source — the audio input that keys the duck (In 1, USB).	Threshold — the level that input must cross to fire (0 to 100%).
MIDI	Channel — the channel to listen on (Omni, or 1 to 16).	Note — the note that fires the duck.

Envelope row

Parameter	Description and Range
Attack	How quickly the level dips when the trigger fires. Range: 1 to 20 ms.
Hold	How long the level stays down before it recovers. Range: 0 to 500 ms.
Release	How long the level takes to return to full. Range: 0 to 500 ms.
Depth	How far the level dips at full duck. Range: 0 to 100%.

Input and Input Gain

Track Configuration has no input or input-gain knob for the sampling track types. Which input a one-shot, multisample, slicer, or loop track records from — and at what gain — lives on the screen that records it, as **Rec Input** and **Rec Gain**. An **External** track is the exception: its **Input** is set here on Track Configuration, because it is a return path rather than a recording, and its gain is **Input Gain** on the External Dashboard. See the [External Tracks chapter](#).

The Menu

Touch the **menu** icon at the far right of the toolbar to open the Track Configuration screen's menu. The menu has two items:

- **Rename Track** — opens the naming keyboard so you can rename the track. The new name appears in the colored header band of the track cell on the Tracks screen and on every other screen that shows the track name.
- **Change Patch** — opens the Patch Browser so you can swap the patch on this track for a different one. See the [Working with Patches chapter](#) for the full set of operations available there.

Working with Patches

Overview

A *patch* is everything blackbox 2 needs to bring a single track to life. Each of your four tracks holds one patch, and the patch tells the track which kind of instrument to play and how it should sound. Depending on what you load, a patch can be any of these instrument types:

Icon	Type	Description
	Multisample	A pitched instrument made from a collection of WAV files, one or more for each playable range of notes. Blackbox 2 interpolates between the samples to fill in the notes in between. You can also load a single WAV file and play it chromatically across the keyboard.
	One-Shot	Up to sixteen samples, each triggered as a single hit. Use it for short WAVs like drum kits, or to launch longer stems that don't need to adjust playback speed to sync.
	Loop	Up to sixteen loops. Blackbox 2 time-shifts their playback to the project tempo, keeping their beats in sync with the rest of your project.
	Slicer	Up to 128 slices cut from a single WAV file, playable as individual hits.
	Shredder	Granular playback built on top of slices from a single WAV file, combining slice playback with a granular engine.
	External	Connects blackbox 2 to outboard gear. Use it to send MIDI to a hardware synthesizer or software instrument, to bring external audio in through the effects and mix, or both at once.

Along with the instrument type, a patch carries the sample assignments, the instrument parameters (envelopes, filters, modulation, and so on), and the tags that help you find it again later. Patches live as files on the microSD card, and

blackbox 2 ships with a factory library you can use as starting points for your own sounds.

The Patch Browser is where you swap the patch on the selected track for a different one, or start a brand new patch. You can filter the factory and user patches by tag or instrument type, audition them without loading, and then load the one you like onto the selected track.

You see the Patch Browser whenever you choose **Change Patch** from a track's menu, or any time the selected track does not yet have a patch loaded.

Saving a Patch

You save your own patches from the track's menu, not from the Patch Browser. Once you have a sound you like on a track, choose **Save Patch** to store it as a **User** patch that you can load onto any track in any project. For the full steps, see the Save Patch section of the [Tracks Screen chapter](#).

Where Patches Are Stored

Patches live on the microSD card in two top-level folders:

- **Patches** — the library of patches that ships with blackbox 2.
- **UserPatches** — the ones you create with **Save Patch**.

Within each folder, patches are organized into subfolders by instrument type: OneShots, Samplnst (multisample), Loops, Slicer, and Shredder.

Each patch is stored as a folder named after the patch. That folder holds everything the patch uses — its settings and all of the WAV files it references — so the patch is self-contained.

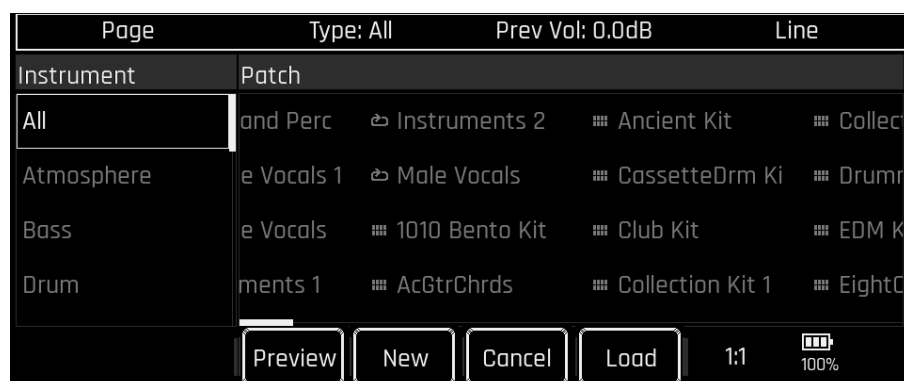
Sharing Patches with Bento

Blackbox 2 and bento use the same patch format, so patches are interchangeable between the two devices for the instrument types both of them support: One-Shot, Loop, Multisample, Slicer, and Shredder. Copy a patch's folder to the matching instrument-type subfolder in **Patches** or **UserPatches** on the other device's microSD card, and it loads just as it would on the device it was made on.

All of the patch's audio settings carry over when you move it between devices. The **tags** that place a patch in the Instrument Filter categories, however, are not shared, so a patch moved from the other device may not appear under the category tags you expect in the Instrument Filter.

The Patch Browser

See and Touch



The Patch Browser

The screen has three regions:

- A **knob bar** along the top.
- The **Instrument Filter** on the left and the **Patch** list on the right, filling most of the screen. Each row in the Patch list carries a small icon showing what kind of instrument the patch will create.
- A **toolbar** along the bottom with the **Preview**, **New**, **Cancel**, and **Load** buttons.

The Instrument Filter holds tags — broad categories like *Atmospheric*, *Bass*, or *Drums* — that narrow the Patch list. It defaults to **All**, which shows everything. One special filter, **User**, shows only the patches you have saved on your blackbox 2; the other filters show a mix of your user patches and the factory patches.

- Tap a tag in the **Instrument Filter** to show only the patches with that tag. Tap **All** at the top to clear the filter.
- Tap a patch in the **Patch** list to select it.
- Swipe the **Instrument Filter** or the **Patch** list to scroll through it.
- Double-tap a patch to load it directly, without using **Load**.

Loading a Patch

1. Make sure the empty track you want to load a patch into is the selected track.
2. Double-tap the track or push **INST** to open the Patch Browser.
3. Use the **Instrument Filter** to narrow the Patch list — tap a tag, **User** for only your saved patches, or **All** for everything.
4. Turn the **Type** knob to filter the list by instrument type (see Twist).
5. Touch a patch to select it.

6. Touch **Load**. Blackbox 2 loads the patch and takes you to that track's first instrument screen so you can start playing.

You can also double-tap a patch to load it directly.

Double-tapping a track or pushing **INST** opens the Patch Browser only when the track is empty.

Changing a Patch

To replace the patch on a track that already has one, use **Change Patch** from the track's menu. It opens this same Patch Browser, where you choose the replacement the same way you load any patch. For the full steps, see the Change Patch section of the [Tracks Screen chapter](#).

Previewing a Patch

You can listen to a patch before loading it. Each patch that supports previewing carries a short preview.wav file on the microSD card, and the browser plays it when previewing is on.

1. Double-tap the empty track or push **INST** to open the Patch Browser.
2. Touch **Preview** in the toolbar to turn previewing on. The button lights up.
3. Select a patch. After a brief pause, blackbox 2 plays its preview file.
4. Adjust the preview volume with the **Prev Vol** knob (see Twist).
5. Touch **Preview** again to turn previewing off.

Press **STOP** to end a preview early. Previewing does not change the patch on your track.

Creating a New Patch

The **New** button starts a fresh, empty patch instead of basing yours on one in the browser.

1. Touch **New** in the toolbar. A picklist of patch types appears.
2. Touch the patch type you want to create — Multisample, One-Shot, Loop, Slicer, Shredder, or External.
3. Blackbox 2 creates a new track of that type with default settings, then opens a screen where you can start configuring the new track.

Cancelling

Touch **Cancel** at any time to leave the Patch Browser without changing the patch on the selected track. Blackbox 2 takes you back to the Tracks screen.

Push

- **Left / Right** arrows change the selected Instrument Filter.
- **Up / Down** arrows change the patch selection.

Twist

Parameter	Description and Range
Page	Scrolls the Patch list one full page at a time.
Type	Filters the Patch list by instrument type. Range: All, Multisample, One-Shot, Loop, Slicer, Shredder, External.
Prev Vol	Sets the preview volume. Saved with your global settings, so it persists between visits.
Line	Steps the selection through the Patch list one patch at a time. The selection wraps between columns at the top or bottom of a column.

The One-Shot Track

A *one-shot* track holds up to sixteen short samples that you trigger as individual hits. Each sample sits on its own pad on the Pad Bank screen, and tapping a pad plays the sample from start to finish. One-shot tracks are the natural fit for drum kits, percussion, stabs, and any other material that you want to fire as a single sound at a time.

Each pad has its own gain, pan, pitch, filter, envelope, effects sends, and so on, so you can build a kit of sixteen completely different sounds on one track.

Pressing the **INST** button on the button strip cycles through two screens:

- The **Pad Bank** screen — the main playing surface, with all sixteen pads on one page.
- The **Dashboard** — a four-tab deep-edit screen for the currently selected pad, broken into **Sound**, **Setup**, **Env/LFO**, and **WAV** views.

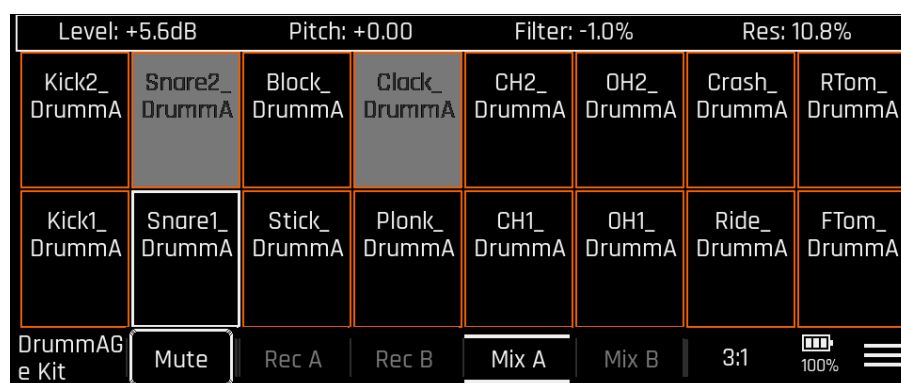
The **Edit WAV** screen is also available for one-shot tracks. It opens from the Dashboard's menu and lets you trim and normalize the WAV file attached to a pad.

You can reach the first INST screen for a one-shot track in two ways: double-tap the track on the Tracks screen, or select the track and press the **INST** button on the button strip.

The Pad Bank Screen

The Pad Bank screen is the main playing surface for the one-shot track. It shows all sixteen pads in a grid, each carrying its sample's name, and tapping a pad fires that sample. Across the top, a knob bar gives you quick access to the selected pad's mix and recording controls. From here you can play the kit, pick the pad to edit, capture a new sample onto a pad, and drop into the Dashboard for deep editing with the **INST** button.

See and Touch



One-Shot Pad Bank screen

KNOB BAR

Turn a knob to adjust its parameter (see *Twist*, below). The toolbar tabs choose which set of parameters the knobs control.

PAD GRID

The grid filling the main area of the screen, with all sixteen pads in a 2-row by 8-column layout. Each pad carries its sample's name, and every pad's outline is drawn in the track's color. The selected pad is shown with a white frame. Touch a pad to trigger its sample and select it at the same time; a white progress bar runs across the pad while the sample plays.

TOOLBAR

The toolbar along the bottom carries the track name, a **Mute** button (see *Muting Pads*, below), and four tab buttons that swap the knob bar between four sets of parameters: **Mix A**, **Mix B**, **Rec A**, and **Rec B**. Switching to **Rec A** or **Rec B** puts the track into audio recording mode; switching back to **Mix A** or **Mix B** takes it out again. The menu icon at the far right opens the Pad Bank menu.

Push

- **Up / Down / Left / Right** — step the selection through the pads without triggering anything. Use this when you want to edit a pad's settings without making any sound. The pad you select is what the knob bar and every Dashboard screen act on.
- **INST** — opens the Dashboard for the selected pad.
- **REC + PLAY** — what it records depends on the mode. In mix mode (**Mix A** or **Mix B**), it records your pad performance into the sequence selected on the Launch screen. In rec mode (**Rec A** or **Rec B**), it starts recording a new sample into the selected pad.

Twist

Touch a tab in the toolbar to choose which set of parameters the knobs control, then turn the knobs to edit them. All four sets act on the selected pad.

Mix A

Parameter	Description and Range	Modulation Target
Level	Output level of the pad. Range: -96 dB to +12 dB.	Yes

Parameter	Description and Range	Modulation Target
Pitch	Pitch offset for the sample. Range: -24 to +24 semitones.	Yes
Filter	Bipolar dual-filter cutoff. At 0% the filter is open; turning down sweeps in a low-pass filter and turning up sweeps in a high-pass filter. Range: -100% to +100%.	Yes
Res	Filter resonance. Range: 0% to 100%.	Yes

Mix B

Parameter	Description and Range	Modulation Target
Delay	Delay-bus send level for the pad. Range: 0% to 100%.	No
Reverb	Reverb-bus send level for the pad. Range: 0% to 100%.	No
Pan	Stereo position of the pad. Range: full left to full right.	Yes
Overdrive	Overdrive amount for the pad. Range: 0% to 100%.	No

Rec A

Parameter	Description and Range	Modulation Target
Length	The maximum length of the recording. Set to Custom to record until you stop. Options: Custom, 1/4, 1/2, 1 bar, 2 bars, 4 bars, 8 bars, 16 bars, 32 bars, 64 bars, 128 bars.	No
Rec Quant	The quantization that lines the start and stop of the recording up with the project's bars and beats. Options: 8 bars, 4 bars, 2 bars, 1 bar, 1/2, 1/4, 1/8, 1/16, None.	No
Rec Gain	The input gain applied to the audio being recorded. Range: -60 dB to +12 dB.	No

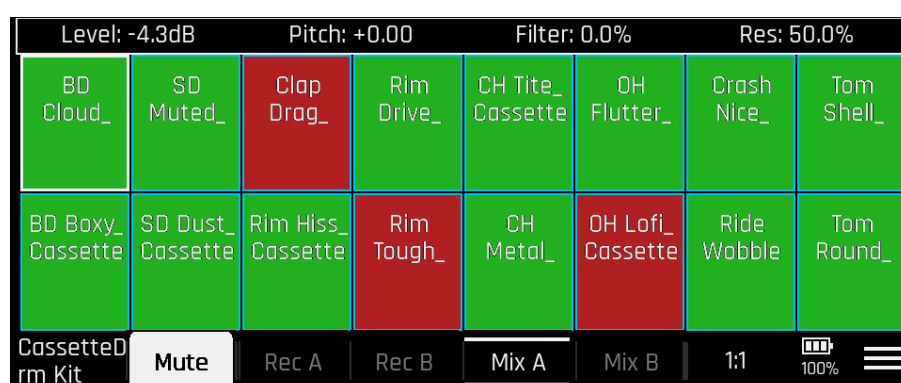
Rec B

Parameter	Description and Range	Modulation Target
Rec Input	The source for the recording. In 1 and In 1L take the audio input jack; USB and USB L take USB audio; Resample records the internal output bus. The L options (In 1L, USB L) record only the left channel of that input. Options: In 1, USB, In 1L, USB L, Resample.	No
Rec Mon	The input monitoring mode. Off never passes the input through; Auto lets you hear the input only while in recording mode (Rec A or Rec B is selected). Options: Off, Auto.	No
Rec Thresh	Whether the recording is armed to start when audio crosses a threshold. Options: Off, On.	No

Parameter	Description and Range	Modulation Target
Threshold	The threshold level for the armed recording. Range: -96 dB to 0 dB.	No

Muting Pads

You can mute individual pads so they stay silent while the rest of the track plays. Tap the **Mute** button in the toolbar to enter **mute mode**; tap it again to leave.



One-Shot Pad Bank, mute mode

In mute mode:

- Each loaded pad's fill shows its state: **green** means the pad is active and will play, **red** means it is muted. Empty pads stay black.
- Tap a pad** to mute or unmute it, or **swipe** across pads to change several at once. The swipe sets every pad it crosses to match the first pad in the swipe: if that first pad becomes muted, all the swiped pads are muted; if it becomes active, they all become active. A muted pad's progress bar still runs, so you can see its playback state.
- Playing pads by touch is turned off while you are muting. To edit a pad instead, select it with the arrow buttons and press **INST**.
- Mute mode works the same way on the Mix and Rec views.

When mute mode is off, a muted pad shows a **light-gray** fill with dimmed text, so you can still tell which pads are muted; a muted pad does not play when you trigger it.

Recording into a Pad

- Select the empty pad you want to record into.

2. Touch **Rec B** in the toolbar and use the knobs to pick the recording source and monitoring mode.
3. Touch **Rec A** in the toolbar and use the knobs to set the recording length, the quantization, and the input gain. Watch the level meter on the cell while you play your source — you want the level as high as it will go without turning red, which means it is clipping.
4. Push **REC + PLAY** to start the recording. While the take waits for its **Rec Quant** boundary or a **Count In**, the pad's name line reads **Rec in bars:beats** in red, with a bar below it that starts full and empties from the left as the start approaches. When capture begins, the name returns and the pad shows *Rec: bar:beat* while it records, then *Stop: bar:beat* while it waits for the quantized stop. A threshold-armed recording shows no countdown, since its start depends on the incoming audio.
5. Wait for the recording to finish on its own, or push **REC** again to stop it early.

Once a take is running, it keeps going wherever you go: you can leave the Pad Bank for other screens and the recording continues, and pressing **REC** on another screen will not start a competing sequence take. The waveform draws on the pad and on the WAV screen as the audio records, so you can watch it fill.

The new sample is saved to the project folder under an automatically generated name. Open the menu and touch **Rename WAV** to give it a name that makes sense.

Recording a Sequence

You can also record your pad performance into a sequence from the Pad Bank screen, capturing which pads you play and when. This is separate from sampling audio onto a pad — it records the triggers, not the sound.

1. Make sure the track is in mix mode. Touch **Mix A** or **Mix B** in the toolbar so the track is not in audio recording mode.
2. On the Launch screen, pick the sequence you want to record into.
3. Return to the Pad Bank screen, then push **REC + PLAY** to start recording.
4. Play the pads in time. Your hits are captured into the selected sequence as you play.
5. Push **STOP** to finish.

You can view and edit the recorded sequence on the Sequence screen. The quantization that the recorded hits snap to is set per sequence on the Sequence screen.

The Pad Bank Menu

Touch the menu icon at the far right of the toolbar to open the Pad Bank menu. The menu has these items:

- **Unload** — removes the sample from the selected pad, leaving the pad empty.
- **Rename WAV** — renames the WAV file behind the selected pad. The naming keyboard opens with the current file name. Type the new name and touch **Enter**.
- **Cut** — cuts the selected pad to the clipboard, leaving the pad empty.
- **Copy** — copies the selected pad's sample and most of its settings — level, pitch, pan, filter, the Env/LFO settings, FX sends, and the modulation matrix — to the clipboard.
- **Paste** — pastes the clipboard into the selected pad, replacing whatever was there. What comes across depends on what you copied:
 - **From a one-shot or loop pad:** the sample and the shared settings.
 - **From a slicer or shredder track:** the WAV and the shared settings, but no slice markers, since a one-shot pad has no slices.

Unload and **Rename WAV** are grayed out if the selected pad is empty. **Paste** is grayed out unless you have cut or copied a sample beforehand. The clipboard holds one sample at a time.

The Dashboard

The Dashboard is where you do the deep editing for a single pad. Reach it from the Pad Bank by pressing **INST** a second time. Press **INST** again from the Dashboard to return to the Pad Bank.

The Dashboard has four tabs along the bottom toolbar:

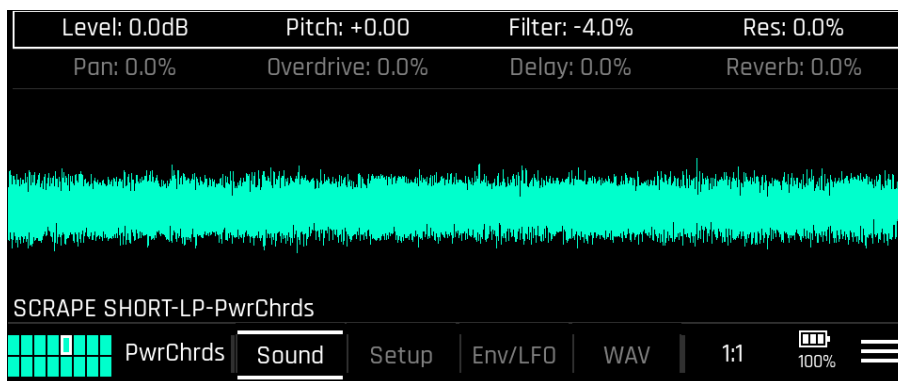
- **Sound** — the gain, pan, pitch, filter, and effects settings.
- **Setup** — reverse, trigger, polyphony, and interpolation options.
- **Env/LFO** — the per-pad envelope and LFO.
- **WAV** — the waveform display and the sample's start, length, and reverse settings.

A **pad selector** sits at the left of the toolbar on every tab. It shows a miniature grid of the sixteen pads with the current pad highlighted, plus the track name. Touch the grid to open a pop-up that fills the screen with the full 16-pad layout, then touch a square to switch the Dashboard to that pad. You can also press the **Left** or **Right** arrow buttons on the button strip to step through the pads one at a time.

The Sound View

The Sound view is where you set the overall tone of the selected pad. Use it to dial in the pad's output level, pitch, filter, and stereo position, add overdrive, and set the delay and reverb send levels. Touch the **Sound** tab on the toolbar to open this view.

See and Touch



One-Shot Sound view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below). Tap the knob bar to choose which row of parameters is controlled by the knobs.

WAVEFORM

The waveform display shows the pad's sample drawn in the track's color. Touch the waveform to start playing the sample from the spot you touched; touch near the very left and blackbox 2 plays from the start regardless of how precisely you hit it. A white vertical line marks the current playback position as the sample plays. Pinch and swipe to zoom in and pan around.

Push

- **Up / Down** — toggles the selected row in the knob bar.
- **Left / Right** — steps to the previous or next pad.
- **INST** — returns to the Pad Bank screen.

Twist

The knob bar has two rows. Tap the knob bar to toggle between them, or press the **Up** and **Down** arrow buttons. Turn the knobs to edit the parameters in the lists below.

Row 1 (Main)

Parameter	Description and Range	Modulation Target
Level	Output level of the pad. Range: -96 dB to +12 dB.	Yes
Pitch	Pitch offset for the sample. Range: -24 to +24 semitones.	Yes
Filter	Bipolar dual-filter cutoff. At 0% the filter is open; turning down sweeps in a low-pass filter and turning up sweeps in a high-pass filter. Range: -100% to +100%.	Yes
Res	Filter resonance. Range: 0% to 100%.	Yes

Row 2 (Effects)

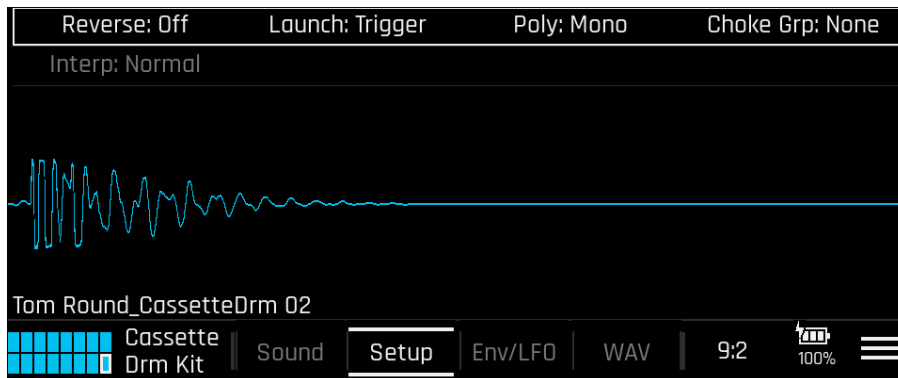
Parameter	Description and Range	Modulation Target
Pan	Stereo position of the pad. Range: full left to full right.	Yes
Overdrive	Overdrive amount for the pad. Range: 0% to 100%.	No
Delay	Delay-bus send level for the pad. Range: 0% to 100%.	No
Reverb	Reverb-bus send level for the pad. Range: 0% to 100%.	No

The Setup View

The Setup view holds the trigger and voicing options for the selected pad. Here you can reverse the sample playback direction, choose how it responds to an event trigger, set how many copies can play at once, assign a choke group, and

pick the interpolation quality. Touch the **Setup** tab on the toolbar to open this view.

See and Touch



One-Shot Setup view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below). Tap the knob bar to choose which row of parameters is controlled by the knobs.

WAVEFORM

The waveform display is the same as on the Sound view. Touch it to play the sample from the spot you touched, and pinch and swipe to zoom and pan.

Push

- **Up / Down** — toggles the selected row in the knob bar.
- **Left / Right** — steps to the previous or next pad.
- **INST** — returns to the Pad Bank screen.

Twist

Row 1

Parameter	Description and Range	Modulation Target
Reverse	Plays the sample backward when on. Options: Off, On.	No

Parameter	Description and Range	Modulation Target
Launch	How the pad responds when it is triggered, whether from the pads, a sequence, or an external MIDI controller. Trigger: the whole sample fires on a note-on, regardless of when the note is released. Gate: the sample plays only while the note is held. Toggle: one trigger starts the sample and the next trigger stops it. Options: Trigger, Gate, Toggle.	No
Poly	How many copies of the pad can play at once. Options: Mono, Poly 2, Poly 4, Poly 6, Poly 8, Poly X (unlimited).	No
Choke Grp	Cuts off another pad in the same group when this pad is triggered — the right behavior for an open-hat and closed-hat pair. Options: None, A, B, C, D.	No

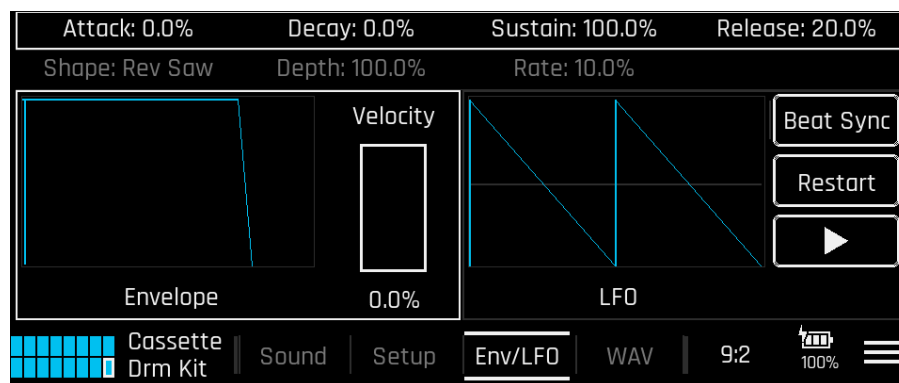
Row 2

Parameter	Description and Range	Modulation Target
Interp	Sample interpolation quality. Use HighQ only when you hear sample playback anomalies, since it uses more CPU. Options: Normal, HighQ.	No

The Env/LFO View

The Env/LFO view shapes how the selected pad's level and modulation evolve over the life of a note. On the left, an ADSR envelope controls the pad's amplitude from the moment it is triggered to after it is released. On the right, an LFO provides a cycling modulation source you can route to the pad's parameters from the modulation matrix. This is the same Env/LFO screen used by the loop, multisample, slicer, and shredder tracks. Touch the **Env/LFO** tab on the toolbar to open this view.

See and Touch



One-Shot Env/LFO view

KNOB BAR

Turn a knob to adjust its parameter (see *Twist*, below). The knob bar has two rows: the envelope (ADSR) parameters and the LFO parameters. Tap the knob bar to toggle between them, or press the **Up** and **Down** arrow buttons. Tapping the envelope graph selects the envelope row; tapping the LFO graph selects the LFO row.

ENVELOPE GRAPH

The graph on the left draws the current ADSR shape.

VELOCITY

A vertical **Velocity** slider sits beside the envelope graph. It sets how much the velocity of a trigger affects the sample's playback level — not the level the pad plays at. The value is shown as a percentage. Touch and drag the slider up or down to adjust it.

LFO GRAPH

The graph on the right draws the current LFO shape. Three buttons sit beside it:

- **Beat Sync** — when on, the LFO rate is synchronized to the tempo, and the **Rate** parameter selects its measurement in beats. The button lights up to show when it is on.
- **Restart** — when on, the LFO restarts from the beginning every time the sound is triggered. The button lights up to show when it is on.
- **Play** (triangle) — touch to trigger the current sound with its current settings so you can hear your envelope and LFO edits.

Push

- **Up / Down** — toggles the selected row in the knob bar (envelope or LFO).
- **Left / Right** and **INST** — behave the same as on the Sound view.

Twist**Row 1 (Envelope)**

Parameter	Description and Range	Modulation Target
Attack	Time the level takes to rise to full after the pad is triggered. Range: 0% to 100%, where 100% is about 9 seconds.	Yes
Decay	Time the level takes to fall from full to the sustain level. Range: 0% to 100%, where 100% is about 38 seconds.	Yes
Sustain	Level the envelope holds at while the note is held. Range: 0% to 100%.	No
Release	Time the level takes to fall to silence after the note is released. Range: 0% to 100%, where 100% is about 38 seconds.	Yes

Row 2 (LFO)

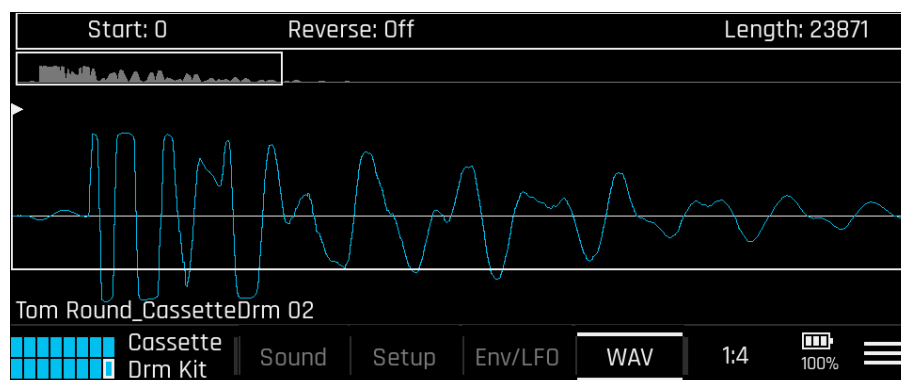
Parameter	Description and Range	Modulation Target
Shape	The LFO waveform. Options: Rev Saw, Saw, Triangle, Pos Tri, Sine, Pos Sine, Square, Pos Square, Random.	No
Depth	How far the LFO modulates its targets. Range: 0% to 100%.	Yes

Parameter	Description and Range	Modulation Target
Rate	How fast the LFO cycles. When Beat Sync is on, the rate is synchronized to the tempo and is measured in beats. Beat Sync off: 0% to 100%. Beat Sync on: 8 bars, 4 bars, 2 bars, 1 bar, 1/2, 1/2T, 1/4, 1/4T, 1/8, 1/8T, 1/16, 1/16T, 1/32, 1/32T, 1/64.	Yes

The WAV View

The WAV view is where you set the part of the sample the pad plays. Here you trim the playback start and length, reverse the sample playback direction, and see the whole waveform with the playback region drawn in. Touch the **WAV** tab on the toolbar to open this view.

See and Touch



One-Shot WAV view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below).

WAVEFORM OVERVIEW

A gray overview above the main display shows the whole sample and where you are zoomed into within it. Touch the overview to jump the main waveform to that part of the sample at the current zoom level.

WAVEFORM

The main waveform shows the sample with the start and length brackets drawn in. The WAV file name is shown in the lower-left corner of the waveform area. Touch the waveform to start playing the sample from the spot you touched; touch near the very left to play from the start regardless of where exactly you hit. Pinch, zoom, and swipe to control the zoom and position.

Push

- **Up / Down** — unused on the WAV view.
- **Left / Right** — steps to the previous or next pad.
- **INST** — returns to the Pad Bank screen.

Twist

Parameter	Description and Range	Modulation Target
Start	The playback start offset. Range: 0 to the length of the WAV, in samples.	No
Reverse	Plays the sample backward when on. Options: Off, On.	No
Length	The playback length from the start offset. Range: 0 to the length of the WAV, in samples.	No

Knob 3 is unused on one-shot tracks.

The Dashboard Menu

The menu icon at the far right of the toolbar opens the Dashboard menu. The same menu is available from all four Dashboard views. Touch the menu icon to open it. The menu has these items:

- **Unload** — removes the sample from the current pad.
- **Rename WAV** — renames the WAV file behind the current pad.
- **Edit WAV** — opens the Edit WAV screen for the current pad. See the [Working with WAV Files chapter](#) for the details.
- **Modulation** — opens the modulation matrix for the current pad so you can route LFOs, envelopes, and other modulation sources to the pad's parameters.
- **Cut** — cuts the sample on the current pad to the clipboard.
- **Copy** — copies the current pad's sample and most of its settings — level, pitch, pan, filter, the Env/LFO settings, FX sends, and the modulation matrix — to the clipboard.

- **Paste** — pastes the clipboard into the current pad, replacing whatever was there. What comes across depends on what you copied:
 - **From a one-shot or loop pad:** the sample and the shared settings.
 - **From a slicer or shredder track:** the WAV and the shared settings, but no slice markers, since a one-shot pad has no slices.

Editing and Recording WAV Files

The **Edit WAV** screen (for trimming and normalizing a pad's sample) and the dedicated **Sample Recorder** (for capturing a new sample into the track) are shared across the sample-based track types. See the [Working with WAV Files chapter](#) for the full description of both, along with how **Rename WAV** behaves depending on where the file lives.

The **Rec A** and **Rec B** quick-capture flow described under **Recording into a Pad** above is a one-shot-only shortcut; the Sample Recorder is the more focused, full-screen way to record.

On a one-shot track, the WAV File Browser is opened for an individual pad, so you record into one specific empty pad at a time. To reach the recorder:

1. Open the one-shot track's Pad Bank screen (select the track and press **INST**).
2. Select the empty pad you want to record into, using the arrow buttons to move the selection to it.
3. Push **INST**. Because the pad is empty, blackbox 2 opens the WAV File Browser for that pad instead of a Dashboard.
4. Touch the Browser's **Record** button. The recorder opens, and the sample you capture is loaded onto that pad.

The Loop Track

A *loop* track holds up to sixteen tempo-synced audio loops that you launch and stop in time with the project. Each loop sits on its own pad on the Loop Bank screen, and tapping a pad arms it to launch on the next quantized boundary. Loop tracks are the natural fit for musical phrases, drum loops, atmospheric pads, and any other audio you want to layer up over a running project. Because each loop time-stretches to match the project tempo, loops recorded at different tempos all play back locked to the same beat, so you can freely combine material from different sources — remixes, mashups, and live layering — and it stays in time.

Each pad has its own gain, pan, pitch, filter, envelope, effects sends, launch mode, and loop behavior, so you can build a bank of sixteen interlocking loops on one track.

Loops only play while blackbox 2's transport is running. Press **PLAY** to start the transport. Pads stay armed until the next quantized boundary, at which point they actually start playing.

Pressing the **INST** button on the button strip cycles through two screens:

- The **Loop Bank** screen — the main launching surface, with all sixteen pads on one page.
- The **Dashboard** — a four-tab deep-edit screen for the currently selected pad, broken into **Sound**, **Setup**, **Env/LFO**, and **WAV** views.

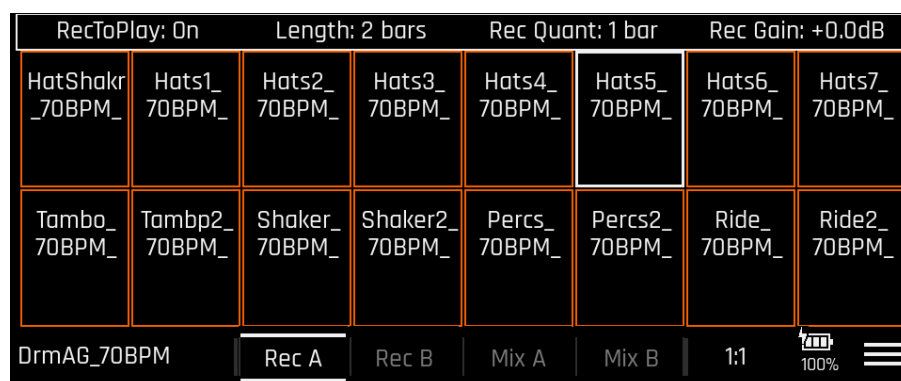
The **Edit WAV** screen is also available for loop tracks. It opens from the Dashboard's menu and lets you trim and normalize the WAV file attached to a pad. See the [Working with WAV Files chapter](#) for the full description; it is the same screen for loops.

You can reach the first INST screen for a loop track in two ways: double-tap the track on the Tracks screen, or select the track and press the **INST** button on the button strip.

The Loop Bank Screen

The Loop Bank screen is the main launching surface for the loop track. It shows all sixteen loops in a grid, each carrying its loop's name, and tapping a pad arms that loop to launch on the next quantized boundary. Across the top, a knob bar gives you quick access to the selected pad's mix and recording controls. From here you can launch the loops, pick the pad to edit, capture a new loop onto a pad, and drop into the Dashboard for deep editing with the **INST** button.

See and Touch



Loop Bank screen

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below). The toolbar tabs choose which set of parameters the knobs control.

PAD GRID

The grid filling the main area of the screen, with all sixteen pads in a 2-row by 8-column layout. Each pad carries its loop's name, and every pad's outline is drawn in the track's color. The selected pad is shown with a white frame. Touch a pad to arm its loop and select it at the same time. Tapping a pad that is already armed disarms it. When the transport reaches the next quantized boundary, the loop starts playing and a white bar fills to show playback progress.

TOOLBAR

The toolbar along the bottom carries the track name, a **Mute** button (see Muting Loops, below), and four tab buttons that swap the knob bar between four sets of parameters: **Mix A**, **Mix B**, **Rec A**, and **Rec B**. Switching to **Rec A** or **Rec B** puts the track into audio recording mode; switching back to **Mix A** or **Mix B** takes it out again. The menu icon at the far right opens the Loop Bank menu.

Push

- **Up / Down / Left / Right** — step the selection through the pads without launching anything. Use this when you want to edit a pad's settings without making any sound. The pad you select is what the knob bar and every Dashboard screen act on.
- **INST** — opens the Dashboard for the selected pad.
- **PLAY** — starts the transport so armed loops begin playing at the next quantized boundary. Any loop groups or sequences armed on the Launch screen start playing too. A loop group can override what you have armed here, launching its own set of loops in place of your selection.
- **REC + PLAY** — what it records depends on the mode. In mix mode (**Mix A** or **Mix B**), it records your launch performance into the sequence selected

on the Launch screen. In rec mode (**Rec A** or **Rec B**), it starts recording a new loop into the selected pad.

Twist

Touch a tab in the toolbar to choose which set of parameters the knobs control, then turn the knobs to edit them. All four sets act on the selected pad.

Mix A

Parameter	Description and Range	Modulation Target
Level	Output level of the pad. Range: -96 dB to +12 dB.	Yes
Pitch	Pitch offset for the loop. Range: -24 to +24 semitones.	Yes
Filter	Bipolar dual-filter cutoff. At 0% the filter is open; turning down sweeps in a low-pass filter and turning up sweeps in a high-pass filter. Range: -100% to +100%.	Yes
Res	Filter resonance. Range: 0% to 100%.	Yes

Mix B

Parameter	Description and Range	Modulation Target
Delay	Delay-bus send level for the pad. Range: 0% to 100%.	No
Reverb	Reverb-bus send level for the pad. Range: 0% to 100%.	No
Pan	Stereo position of the pad. Range: full left to full right.	Yes

Parameter	Description and Range	Modulation Target
Overdrive	Overdrive amount for the pad. Range: 0% to 100%.	No

Rec A

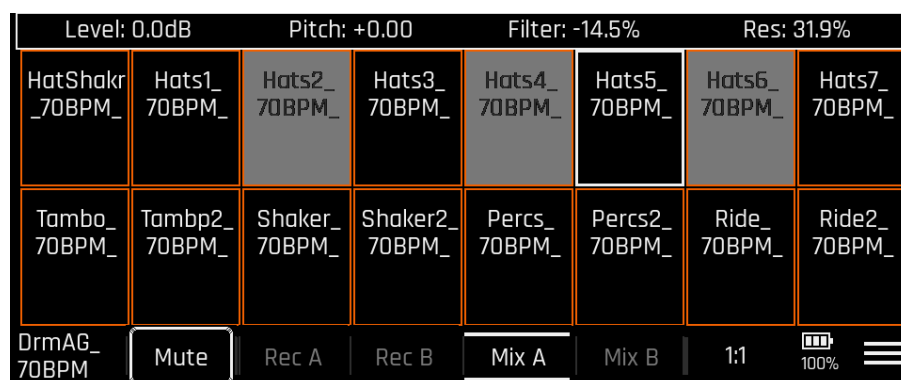
Parameter	Description and Range	Modulation Target
Rec to Play	Whether the new loop starts playing automatically as soon as the recording finishes. Options: Off, On.	No
Length	The maximum length of the recording. Set to Custom to record until you stop. Options: Custom, 1/4, 1/2, 1 bar, 2 bars, 4 bars, 8 bars, 16 bars, 32 bars, 64 bars, 128 bars.	No
Rec Quant	The quantization that lines the start and stop of the recording up with the project's bars and beats. Options: 8 bars, 4 bars, 2 bars, 1 bar, 1/2, 1/4, 1/8, 1/16, None.	No
Rec Gain	The input gain applied to the audio being recorded. Range: -60 dB to +12 dB.	No

Rec B

Parameter	Description and Range	Modulation Target
Rec Input	The source for the recording. In 1 and In 1L take the audio input jack; USB and USB L take USB audio; Resample records the internal output bus. The L options (In 1L, USB L) record only the left channel of that input. Options: In 1, USB, In 1L, USB L, Resample.	No
Rec Mon	The input monitoring mode. Off never passes the input through; Auto lets you hear the input only while a recording is in progress. Options: Off, Auto.	No
Rec Thresh	Whether the recording is armed to start when audio crosses a threshold. Options: Off, On.	No
Threshold	The threshold level for the armed recording. Range: -96 dB to 0 dB.	No

Muting Loops

You can mute individual loops so they stay silent while the rest of the track plays. Tap the **Mute** button in the toolbar to enter **mute mode**; tap it again to leave.



Loop Bank, mute mode

In mute mode:

- Each loaded pad's fill shows its state: **green** means the loop is active and will play, **red** means it is muted. Empty pads stay black.
- **Tap a pad** to mute or unmute its loop, or **swipe** across pads to change several at once. The swipe sets every pad it crosses to match the first pad in the swipe: if that first loop becomes muted, all the swiped loops are muted; if it becomes active, they all become active. A muted loop's progress bar still runs, so you can see its playback state.
- Arming loops by touch is turned off while you are muting. To edit a pad instead, select it with the arrow buttons and press **INST**.
- Mute mode works the same way on the Mix and Rec views.

When mute mode is off, a muted loop shows a **light-gray** fill with dimmed text, so you can still tell which loops are muted; a muted loop does not play when you launch it. Muted loops also appear dimmed on the Loop Groups screen (see the [Loop Groups chapter](#)).

Recording into a Pad

1. Select the empty pad you want to record into.
2. Touch **Rec B** in the toolbar and use the knobs to pick the recording source and monitoring mode.
3. Touch **Rec A** in the toolbar and use the knobs to set the recording length, the quantization, and the input gain. Watch the level meter on the cell while you play your source — you want the level as high as it will go without turning red, which means it is clipping.
4. Push **REC + PLAY** to start the recording. While the take waits for its **Rec Quant** boundary or a **Count In**, the pad's name line reads **Rec in bars:beats** in red, with a bar below it that starts full and empties from the left as the start approaches. When capture begins, the name returns and the pad shows *Rec: bar:beat* while it records. A threshold-armed recording shows no countdown, since its start depends on the incoming audio.
5. Wait for the recording to finish on its own, or push **REC** again to stop it early.

Once a take is running, it keeps going wherever you go: you can leave the Loop Bank for other screens and the recording continues, and pressing **REC** on another screen will not start a competing sequence take. The waveform draws on the pad and on the WAV screen as the audio records, so you can watch it fill.

The new loop is saved to the project folder under an automatically generated name. Open the menu and touch **Rename WAV** to give it a name that makes sense.

The Loop Bank Menu

Touch the menu icon at the far right of the toolbar to open the Loop Bank menu. The menu has these items:

- **Unload** — removes the loop from the selected pad, leaving the pad empty.
- **Rename WAV** — renames the WAV file behind the selected pad. The naming keyboard opens with the current file name. Type the new name and touch **Enter**.
- **Cut** — cuts the selected pad to the clipboard, leaving the pad empty.
- **Copy** — copies the selected pad's loop and most of its settings — level, pitch, pan, filter, the Env/LFO settings, FX sends, and the modulation matrix — to the clipboard.
- **Paste** — pastes the clipboard into the selected pad, replacing whatever was there. What comes across depends on what you copied:
 - **From a one-shot or loop pad:** the sample and the shared settings.
 - **From a slicer or shredder track:** the WAV and the shared settings, but no slice markers, since a loop pad has no slices.

Unload and **Rename WAV** are grayed out if the selected pad is empty. **Paste** is grayed out unless you have cut or copied a sample pad beforehand. The clipboard holds one sample pad at a time.

The Dashboard

The Dashboard is where you do the deep editing for a single loop. Reach it from the Loop Bank by pressing **INST** a second time. Press **INST** again from the Dashboard to return to the Loop Bank.

The Dashboard has four tabs along the bottom toolbar:

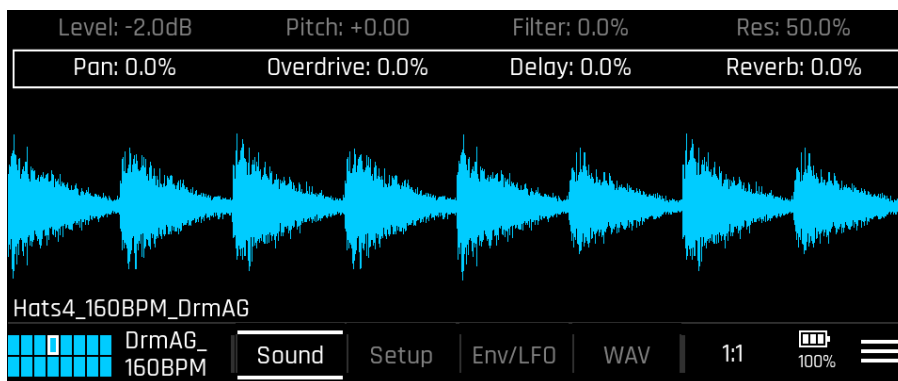
- **Sound** — the gain, pan, pitch, filter, and effects settings.
- **Setup** — launch mode, loop mode, quantization, sync, beat count, and polyphony.
- **Env/LFO** — the per-pad envelope and LFO.
- **WAV** — the waveform display and the loop-mode setting.

A **pad selector** sits at the left of the toolbar on every tab. It shows a miniature grid of the sixteen pads with the current pad highlighted, plus the track name. Touch the grid to open a pop-up that fills the screen with the full 16-pad layout, then touch a square to switch the Dashboard to that pad. You can also press the **Left** or **Right** arrow buttons on the button strip to step through the pads one at a time.

The Sound View

The Sound view is where you set the overall tone of the selected pad. Use it to dial in the pad's output level, pitch, filter, and stereo position, add overdrive, and set the delay and reverb send levels. Touch the **Sound** tab on the toolbar to open this view.

See and Touch



Loop Sound view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below). Tap the knob bar to choose which row of parameters is controlled by the knobs.

WAVEFORM

The waveform display shows the pad's loop drawn in the track's color. Touch the waveform to start playing the loop from the spot you touched; touch near the very left and blackbox 2 plays from the start regardless of how precisely you hit it. This preview plays the WAV file at its natural speed, without time-syncing it to the project tempo. A white vertical line marks the current playback position as the loop plays. Pinch and swipe to zoom in and pan around.

Push

- **Up / Down** — toggles the selected row in the knob bar.
- **Left / Right** — steps to the previous or next pad, changing which loop you are editing.
- **INST** — returns to the Loop Bank screen.

Twist

The knob bar has two rows. Tap the knob bar to toggle between them, or press the **Up** and **Down** arrow buttons. Turn the knobs to edit the parameters in the lists below.

Row 1 (Main)

Parameter	Description and Range	Modulation Target
Level	Output level of the pad. Range: -96 dB to +12 dB.	Yes
Pitch	Pitch offset for the loop. Range: -24 to +24 semitones.	Yes
Filter	Bipolar dual-filter cutoff. At 0% the filter is open; turning down sweeps in a low-pass filter and turning up sweeps in a high-pass filter. Range: -100% to +100%.	Yes
Res	Filter resonance. Range: 0% to 100%.	Yes

Row 2 (Effects)

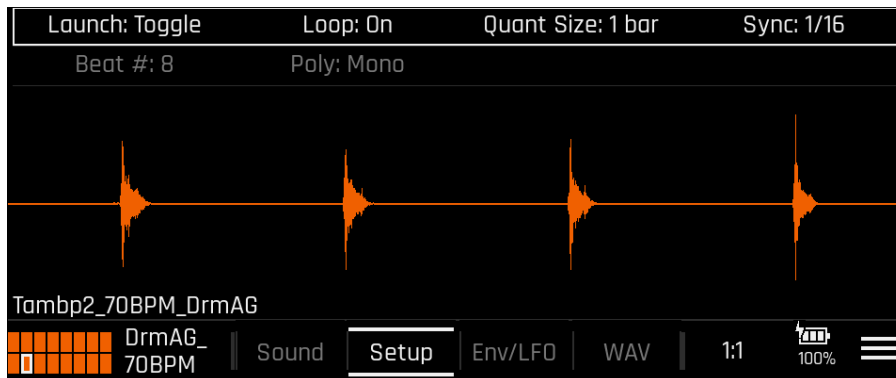
Parameter	Description and Range	Modulation Target
Pan	Stereo position of the pad. Range: full left to full right.	Yes
Overdrive	Overdrive amount for the pad. Range: 0% to 100%.	No
Delay	Delay-bus send level for the pad. Range: 0% to 100%.	No
Reverb	Reverb-bus send level for the pad. Range: 0% to 100%.	No

The Setup View

The Setup view holds the launching and looping options for the selected pad. Here you choose how the pad responds when launched, whether the loop repeats, the quantization grids it launches and syncs to, how many beats it

covers, and how many copies can play at once. Touch the **Setup** tab on the toolbar to open this view.

See and Touch



Loop Setup view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below). Tap the knob bar to choose which row of parameters is controlled by the knobs.

WAVEFORM

The waveform display is the same as on the Sound view. Touch it to play the loop from the spot you touched, and pinch and swipe to zoom and pan.

Push

- **Up / Down** — toggles the selected row in the knob bar.
- **Left / Right** — steps to the previous or next pad, changing which loop you are editing.
- **INST** — returns to the Loop Bank screen.

Twist**Row 1**

Parameter	Description and Range	Modulation Target
Launch	How the pad responds when it is launched, which also affects whether it loops. Trigger: plays the loop once and stops, even if Loop is on. Gate: plays only while your finger is held down. Toggle: one tap starts the loop and the next stops it; if Loop is on, it keeps looping until you toggle it off. Options: Trigger, Gate, Toggle.	No
Loop	Whether the loop repeats when it reaches the end. Its effect depends on the Launch mode: in Trigger mode the loop always plays once regardless of this setting; in Toggle mode, On keeps it looping until you toggle it off. Options: Off, On.	No
Quant Size	The quantization grid that launching and stopping snap to. Time-syncing the loop to the project tempo requires both Quant Size and Sync to be set to something other than None. Options: 8 bars, 4 bars, 2 bars, 1 bar, 1/2, 1/4, 1/8, 1/16, None.	No
Sync	The rhythmic grid the loop locks to as it plays, keeping it in time with the project tempo. Smaller values re-align the loop to the grid more often. None plays the loop at its natural length without syncing. Time-syncing requires both Sync and Quant Size to be set to something other than None. For the Slice option to work, the WAV file must have slice markers embedded in it. Options: Slice, 1 bar, 1/2, 1/4, 1/8, 1/16, None.	No

Row 2

Parameter	Description and Range	Modulation Target
Beat #	How many beats the loop covers, used to match it to the project tempo. Set to Auto to let blackbox 2 detect it. Options: Auto, or 1 to 512.	No
Poly	How many copies of the pad can play at once. Options: Mono, Poly 2, Poly 4, Poly 6, Poly 8, Poly X (unlimited).	No

The Env/LFO View

Touch the **Env/LFO** tab on the toolbar to open this view. It is the same Env/LFO screen used by the one-shot, multisample, slicer, and shredder tracks. See the [One-Shot Track chapter](#) for the full description.

The WAV View

The WAV view shows the whole loop waveform and carries the loop-mode setting. Touch the **WAV** tab on the toolbar to open this view.

See and Touch

Loop WAV view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below).

WAVEFORM OVERVIEW

A gray overview above the main display shows the whole loop and where you are zoomed into within it. Touch the overview to jump the main waveform to that part of the loop at the current zoom level.

WAVEFORM

The main waveform shows the loop drawn in the track's color. The WAV file name is shown in the lower-left corner of the waveform area. Touch the waveform to start playing the loop from the spot you touched; touch near the very left to play from the start regardless of where exactly you hit. Pinch, zoom, and swipe to control the zoom and position.

Push

- **Up / Down** — unused on the WAV view.
- **Left / Right** — steps to the previous or next pad, changing which loop you are editing.
- **INST** — returns to the Loop Bank screen.

Twist

Parameter	Description and Range	Modulation Target
Loop	Whether the loop repeats when it reaches the end — the same setting as Loop on the Setup view. Options: Off, On.	No

Knobs 2, 3, and 4 are unused on this view.

The Dashboard Menu

The menu icon at the far right of the toolbar opens the Dashboard menu. The same menu is available from all four Dashboard views. Touch the menu icon to open it. The menu has these items:

- **Unload** — removes the loop from the current pad.
- **Rename WAV** — renames the WAV file behind the current pad.
- **Edit WAV** — opens the Edit WAV screen for the current pad. See the [Working with WAV Files chapter](#) for the details.
- **Modulation** — opens the modulation matrix for the current pad so you can route LFOs, envelopes, and other modulation sources to the pad's parameters.
- **Cut** — cuts the loop on the current pad to the clipboard.

- **Copy** — copies the current pad's loop and most of its settings — level, pitch, pan, filter, the Env/LFO settings, FX sends, and the modulation matrix — to the clipboard.
- **Paste** — pastes the clipboard into the current pad, replacing whatever was there. What comes across depends on what you copied:
 - **From a one-shot or loop pad:** the sample and the shared settings.
 - **From a slicer or shredder track:** the WAV and the shared settings, but no slice markers, since a loop pad has no slices.

The Sample Recorder

Beyond the **Rec A** and **Rec B** quick-capture flow on the Loop Bank, blackbox 2 also has a dedicated **Sample Recorder** for capturing a new loop into the project from the audio input or USB. It is the same recorder used by the other sample-based tracks. See the [Working with WAV Files chapter](#) for the full description.

On a loop track, the WAV File Browser is opened for an individual pad, so you record into one specific empty pad at a time. To reach the recorder:

1. Open the loop track's Loop Bank screen (select the track and press **INST**).
2. Select the empty pad you want to record into, using the arrow buttons to move the selection to it.
3. Push **INST**. Because the pad is empty, blackbox 2 opens the WAV File Browser for that pad instead of a Dashboard.
4. Touch the Browser's **Record** button. The recorder opens, and the loop you capture is loaded onto that pad.

The Multisample Track

A *multisample* track is a pitched instrument built from a collection of WAV files, one or more for each playable range of notes. Blackbox 2 interpolates between the recorded samples to fill in the notes in between, so a multisample built from a few sampled notes can cover the full keyboard. Multisample tracks are the natural fit for pianos, electric pianos, strings, pads, synth presets, and any other instrument you would normally play from a keyboard.

Unlike one-shot and loop tracks, a multisample is a single instrument rather than sixteen separate pads. Settings like level, pitch, filter, polyphony, envelope, and LFO apply to the whole track at once. Each WAV in the multisample set has its own start, end, and loop points, but the rest of the parameters are shared.

Pressing the **INST** button on the button strip cycles through two screens:

- The **Keys** screen — the main playing surface, either a piano keyboard or a button grid.
- The **Dashboard** — a four-tab deep-edit screen for the track, broken into **Sound**, **Setup**, **Env/LFO**, and **WAV** views.

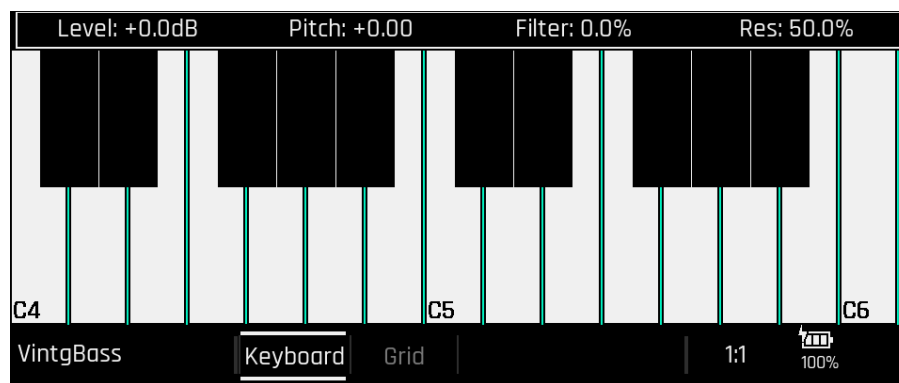
A separate **Multisample Recording** wizard captures a fresh multisample set from an external MIDI instrument. When you create a new multisample track, blackbox 2 opens the WAV File Browser; tap **Record** in the footer to open the wizard. See the end of this chapter for the details.

You can reach the first INST screen for a multisample track in two ways: double-tap the track on the Tracks screen, or select the track and press the **INST** button on the button strip.

The Keys Screen

The Keys screen is the main playing surface for the multisample track. It plays the instrument from a 25-key piano keyboard or a button grid, and you switch between the two layouts with the toolbar tabs. Across the top, a knob bar gives you quick access to the track's level, pitch, and filter. From here you can play the multisample from the touch screen or from MIDI, and drop into the Dashboard for deep editing with the **INST** button.

See and Touch



Multisample Keys screen, Keyboard layout

KNOB BAR

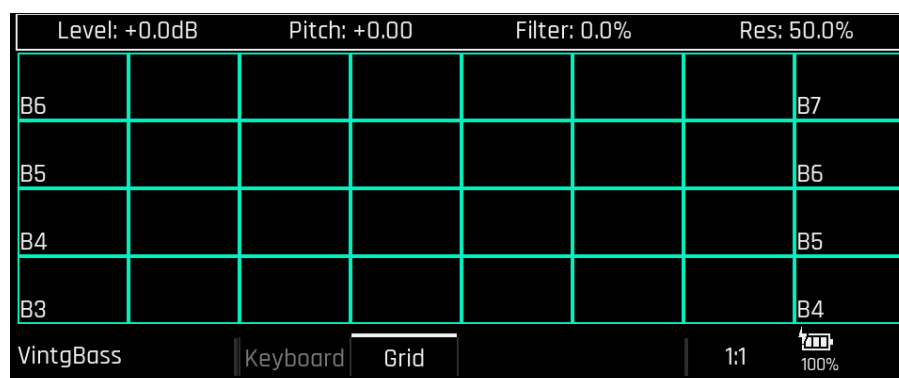
Turn a knob to adjust its parameter (see Twist, below).

PLAYING SURFACE

The main area of the screen is the playing surface, drawn in one of two layouts:

- **Keyboard** — a 25-key piano keyboard. The keys you touch turn the track color while they play. The first C key is labeled with its note name and octave (for example **C4**).
- **Grid** — a button grid that shows one octave of notes in each row. Which notes appear, and where the root falls, follow the **Root Note** and **Scale** set on the Project Settings screen. The grid includes only the notes in the scale, so every cell you touch is in key — you can't play a wrong note. The grid lines and key edges are drawn in the track color, and the cell you touch fills with track color while it plays. The root key in each row is labeled with its note name and octave.

Touch a key or cell to play that note. Blackbox 2 remembers which layout and octave you used last on each track.



Multisample Keys screen, Grid layout

TOOLBAR

The toolbar along the bottom shows the track name at the left and two layout tabs: **Keyboard** and **Grid**. Touch a tab to switch layouts; the active layout's tab is highlighted.

Push

- **Up / Down** — slide the keyboard or grid by one octave.
- **Left / Right** — in the **Keyboard** layout, slide by one semitone; in the **Grid** layout, slide by one octave.
- **INST** — opens the Dashboard.

The octave you scroll to is remembered per track.

Twist

Turn the knobs in the knob bar to edit the parameters in the list below.

Parameter	Description and Range	Modulation Target
Level	Output level of the track. Range: -96 dB to +12 dB.	Yes
Pitch	Pitch offset applied to the whole multisample. Range: -24 to +24 semitones.	Yes
Filter	Bipolar dual-filter cutoff. At 0% the filter is open; turning down sweeps in a low-pass filter and turning up sweeps in a high-pass filter. Range: -100% to +100%.	Yes
Res	Filter resonance. Range: 0% to 100%.	Yes

The Dashboard

The Dashboard is where you do the deep editing for a multisample track. Reach it from the Keys screen by pressing **INST** a second time. Press **INST** again from the Dashboard to return to the Keys screen.

The Dashboard has four tabs along the bottom toolbar:

- **Sound** — the gain, pan, pitch, filter, and polyphony settings.

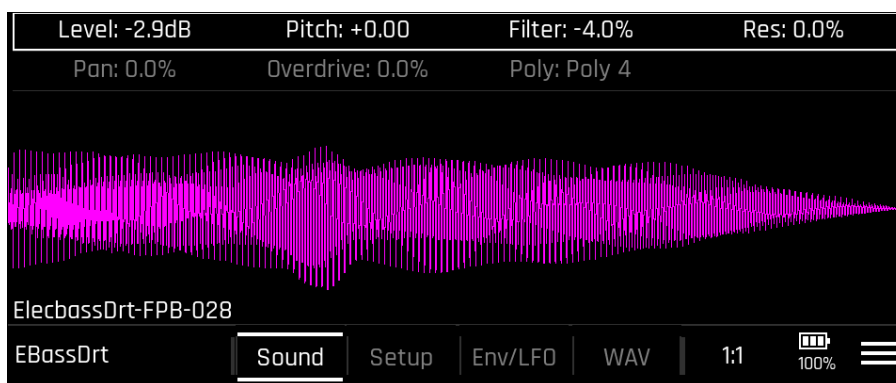
- **Setup** — reverse, loop, fade, launch, and interpolation options.
- **Env/LFO** — the track's envelope and LFO.
- **WAV** — the waveform display and the start, loop, and end points for the individual WAV files in the multisample set.

The track name appears at the left of the toolbar.

The Sound View

The Sound view is where you set the overall tone of the multisample. Use it to dial in the track's output level, pitch, filter, and stereo position, add overdrive, and set how many notes can sound at once. Touch the **Sound** tab on the toolbar to open this view.

See and Touch



Multisample Sound view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below). Tap the knob bar to choose which row of parameters is controlled by the knobs.

WAVEFORM

The waveform display shows one WAV from the multisample set drawn in the track's color, with the WAV's file name in the lower left. The WAV shown is the one played by the last note you triggered, whether from the Keys screen, an external MIDI controller, or a sequence. Touch the waveform to start playing that WAV from the spot you touched; touch near the very left and blackbox 2 plays from the start regardless of how precisely you hit it. A white vertical line marks the current playback position as the WAV plays. Pinch and swipe to zoom in and pan around.

Push

- **Up / Down** — toggles the selected row in the knob bar.
- **Left / Right** — switches the preview WAV to a different file in the multisample set.

- **INST** — returns to the Keys screen.

Twist

The knob bar has two rows. Tap the knob bar to toggle between them, or press the **Up** and **Down** arrow buttons. Turn the knobs to edit the parameters in the lists below.

Row 1 (Main)

Parameter	Description and Range	Modulation Target
Level	Output level of the track. Range: -96 dB to +12 dB.	Yes
Pitch	Pitch offset applied to the whole multisample. Range: -24 to +24 semitones.	Yes
Filter	Bipolar dual-filter cutoff. At 0% the filter is open; turning down sweeps in a low-pass filter and turning up sweeps in a high-pass filter. Range: -100% to +100%.	Yes
Res	Filter resonance. Range: 0% to 100%.	Yes

Row 2 (Effects)

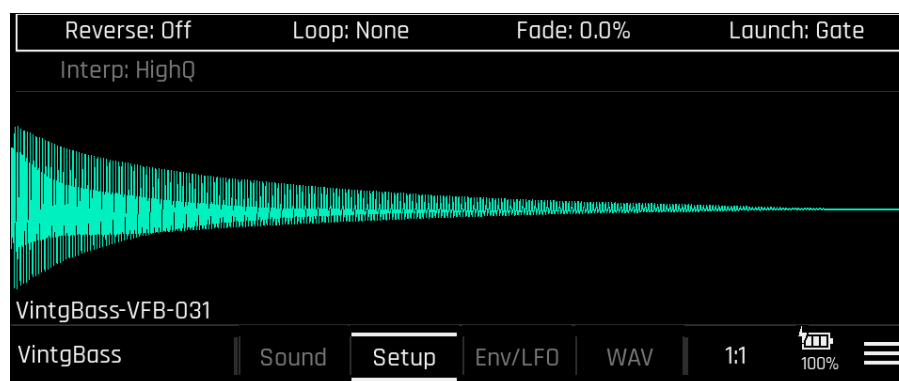
Parameter	Description and Range	Modulation Target
Pan	Stereo position of the track. Range: full left to full right.	Yes
Overdrive	Overdrive amount for the track. Range: 0% to 100%.	No

Parameter	Description and Range	Modulation Target
Poly	How many notes the track can play at once. Options: Mono, Poly 2, Poly 4, Poly 6, Poly 8, Poly X (unlimited).	No

The Setup View

The Setup view holds the playback options for the multisample's WAVs. Here you reverse playback, choose how each WAV loops and the crossfade at the loop point, set how the track responds to a note, and pick the interpolation quality. Touch the **Setup** tab on the toolbar to open this view.

See and Touch



Multisample Setup view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below). Tap the knob bar to choose which row of parameters is controlled by the knobs.

WAVEFORM

The waveform display is the same as on the Sound view. Touch it to play the WAV from the spot you touched, and pinch and swipe to zoom and pan.

Push

- **Up / Down** — toggles the selected row in the knob bar.
- **Left / Right** — switches the preview WAV to a different file in the multisample set.
- **INST** — returns to the Keys screen.

Twist**Row 1**

Parameter	Description and Range	Modulation Target
Reverse	Plays each WAV backward when on. Options: Off, On.	No
Loop	How each WAV loops. None plays it once and stops; Forward plays from the loop start through to the loop end, then jumps back to the loop start and repeats; Bidirect plays forward to the loop end, then backward to the loop start, and continues back and forth. Options: None, Forward, Bidirect.	No
Fade	Crossfade time applied at the loop point so the loop wrap stays seamless. Range: 0% to 100%.	No
Launch	How the track responds to a note-on and note-off. Trigger: the note plays to its end. Gate: the note plays only while the key is held. Toggle: one press starts the note, the next stops it. Options: Trigger, Gate, Toggle.	No

Row 2

Parameter	Description and Range	Modulation Target
Interp	Interpolation quality used to fill in notes between the recorded samples. Use HighQ only if you hear playback anomalies while playing the track, since it uses more CPU. Options: Normal, HighQ.	No

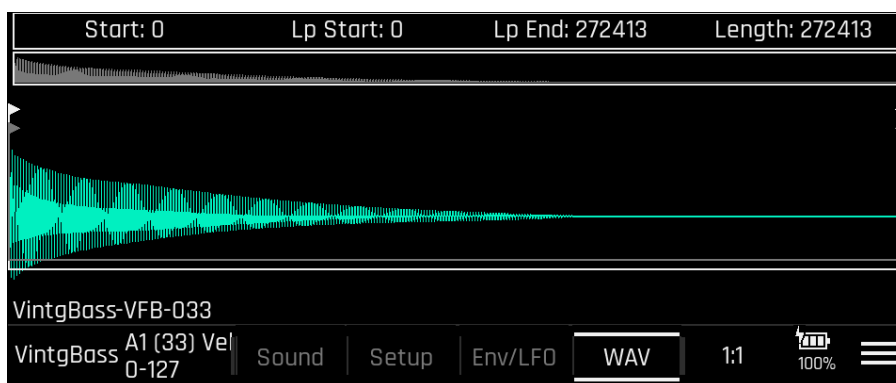
The Env/LFO View

Touch the **Env/LFO** tab on the toolbar to open this view. It is the same Env/LFO screen used by the one-shot, loop, slicer, and shredder tracks. See the [One-Shot Track chapter](#) for the full description.

The WAV View

The WAV view is where you set the playback and loop points for the individual WAV files in the multisample set. Each WAV has its own start, loop, and end points. Touch the **WAV** tab on the toolbar to open this view.

See and Touch



Multisample WAV view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below).

WAVEFORM OVERVIEW

A gray overview above the main display shows the whole WAV and where you are zoomed into within it. Touch the overview to jump the main waveform to that part of the WAV at the current zoom level.

WAVEFORM

The main waveform shows the selected WAV with the start, loop, and end points drawn in. Tall white brackets mark the start and end points, and shorter gray brackets mark the loop start and loop end points. The WAV file name is shown in the lower-left corner of the waveform area. Touch the waveform to start playing the WAV from the spot you touched; touch near the very left to play from the start regardless of where exactly you hit. Pinch, zoom, and swipe to control the zoom and position.

Push

- **Up / Down** — unused on the WAV view.
- **Left / Right** — steps through the WAV files in the multisample set; the knobs follow whichever WAV you select.

- **INST** — returns to the Keys screen.

Twist

Parameter	Description and Range	Modulation Target
Start	The playback start offset for this WAV. Range: 0 to the length of the WAV, in samples.	No
Lp Start	The loop start point, in samples.	No
Lp End	The loop end point, in samples.	No
Length	The playback length from the start offset, in samples.	No

The Dashboard Menu

The menu icon at the far right of the toolbar opens the Dashboard menu. The same menu is available from all four Dashboard views. Touch the menu icon to open it. The menu has these items:

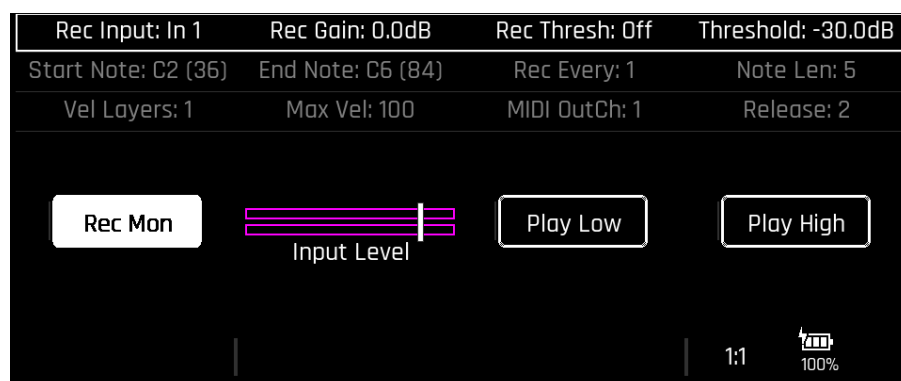
- **Unload** — removes the WAV from a track. Grayed out on multisample tracks.
- **Rename WAV** — renames the WAV file currently selected on the WAV view. Use **Left / Right** on that view to choose which WAV in the set you are renaming.
- **Edit WAV** — opens the Edit WAV screen for the currently selected WAV. See the [Working with WAV Files chapter](#) for the details.
- **Modulation** — opens the modulation matrix for the track so you can route LFOs, envelopes, and other modulation sources to the track's parameters.

The **Unload**, **Cut**, **Copy**, and **Paste** items are grayed out on multisample tracks. You cannot remove or add individual samples from a multisample set, so these operations do not apply.

The Multisample Recording Wizard

The Multisample Recording wizard lets you capture a new multisample set from an external MIDI instrument. Blackbox 2 drives the source instrument through a

range of notes and velocities, records each note in turn, and saves the resulting files into the project folder ready for use as the track's multisample.



The Multisample Recording wizard

You reach the recording wizard from the Patch Browser:

1. Press the **TRACKS** button and select an empty track slot.
2. Touch the empty cell to open the Patch Browser.
3. Touch **New** and pick **Multisample**.
4. Touch **Record** on the WAV browser screen that opens.
5. The naming keyboard opens. Type a name for the multisample set and touch **Enter**. Blackbox 2 creates a folder under the project with that name.

The recording wizard then opens. If you leave this screen before you have recorded a set, blackbox 2 returns you to the wizard when you press **INST** on the track or double-tap the track, since the multisample is not yet usable.

The Knobs

The wizard's knob bar has three rows of parameters. Tap a row at the top of the screen or press the **Up** and **Down** arrow buttons on the button strip to swap which row the knobs control.

Row 1 (Recording I/O):

- **Knob 1: Rec In** — the audio source for the recording: the audio input jack or USB.
- **Knob 2: Rec Gain** — the input gain applied to the audio being recorded, in dB.
- **Knob 3: Rec Thresh** — whether the recording is armed to start when the audio crosses a threshold.
- **Knob 4: Thresh** — the threshold level for the armed recording, in dB.

Row 2 (Note Range and Timing):

- **Knob 1: Start Note** — the lowest MIDI note in the range that blackbox 2 will record.

- **Knob 2: End Note** — the highest MIDI note in the range.
- **Knob 3: Rec Every** — the spacing between recorded notes. Set it to 1 to record every semitone, 2 to record every whole tone, and so on. Larger spacings make smaller, faster recordings at the cost of more interpolation between the recorded notes.
- **Knob 4: Note Len** — the length of each MIDI note blackbox 2 plays into the source instrument, in milliseconds.

Row 3 (Velocity and MIDI Out):

- **Knob 1: Vel Layers** — the number of velocity layers to record per note. More layers give a more expressive multisample at the cost of a bigger and longer recording.
- **Knob 2: Max Vel** — the highest MIDI velocity used.
- **Knob 3: MIDI Out Ch** — the MIDI channel blackbox 2 sends the notes out on. Set this to match the channel your source instrument is listening on.
- **Knob 4: Release** — sets the release tail recorded for each note.

The Input Level Meter and Buttons

The middle of the wizard shows a stereo input level meter so you can adjust the gain on Row 1 to fit the source.

Four buttons sit around the meter:

- **Rec Mon** — toggles input monitoring on and off so you can hear what the recording will capture before you commit to it. The button lights up to show when monitoring is on.
- **Play Low** — sends the **Start Note** out the MIDI port at the current velocity setting. Use this to confirm that your source instrument is responding at the bottom of the range you have set.
- **Play High** — sends the **End Note** out the MIDI port the same way. Use this to confirm the top of the range before you commit to a full recording.

The **Play Low** and **Play High** buttons are hidden while a recording is in progress.

Recording

1. Connect your source instrument's MIDI input to blackbox 2's MIDI out. Set the source to listen on the channel you set with the **MIDI Out Ch** knob.
2. Connect the source's audio output to the audio input you picked with the **Rec In** knob.
3. Touch **Rec Mon** and play a few notes on the source. Adjust **Rec Gain** so the level meter sits as high as it will go without clipping.

4. Set the note range, velocity layers, and timing on the other knob rows to match what you want to capture.
5. Touch **Play Low** and **Play High** to confirm the source instrument is responding at both ends of the range you have set.
6. Push **REC + PLAY** to start the wizard.

While the wizard is running, a red box on the screen reads *Recording* and shows the *current of total* count of notes that have been recorded. The knob labels are dimmed to show that you cannot change settings while a recording is in progress.

Push **STOP** if you want to stop the wizard before it finishes. The notes recorded so far remain on the microSD card, but if you restart the wizard the previously recorded files are replaced.

When the wizard finishes recording every note in the range, it takes you to the Multisample Dashboard for the track so you can start playing.

The recorded WAVs are saved into a subfolder of the current project's folder, named after the multisample set you entered at the start. Each file is named in the form *set-name-note-velocity.wav*, where *note* and *velocity* are the three-digit, zero-padded MIDI note number and velocity of that recording — for example, **Piano-060-100.wav**. This is the same naming convention used by blackbox and bento.

To leave the wizard, push a button to go to another screen. The folder you created for the set is left in place; you can record into it later, or delete it from the microSD card if you change your mind.

The Slicer Track

A *slicer* track plays back up to 128 slices cut from a single WAV file, with each slice triggered as an individual hit. Blackbox 2 finds the slice boundaries for you with a transient scanner, or you can let it divide the WAV evenly on a grid, and you can also add and remove slice markers by hand. Slicer tracks are the natural fit for chopped drum loops, vocal stutters, breakbeats, and anything else that you want to slice up and play back out of order or one piece at a time.

All slices on a slicer track share one set of envelope, filter, pitch, and effects parameters, but each slice has its own start position inside the WAV. How many slices can play at the same time is set by the **Poly** knob on the Dashboard's Sound view, just as it is on the other track types.

Pressing the **INST** button on the button strip cycles through two screens:

- The **Slice Grid** screen — the main playing surface, with one button per slice in a grid.
- The **Dashboard** — a four-tab deep-edit screen for the track, broken into **Sound**, **Setup**, **Env/LFO**, and **WAV** views.

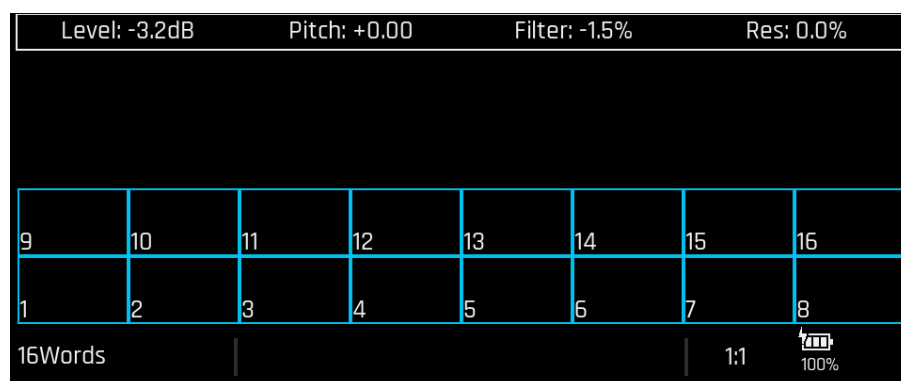
The **Edit WAV** screen is also available for slicer tracks. It opens from the Dashboard's menu and lets you trim and normalize the WAV file. See the [Working with WAV Files chapter](#) for the full description; it is the same screen for slicers.

You can reach the first INST screen for a slicer track in two ways: double-tap the track on the Tracks screen, or select the track and press the **INST** button on the button strip.

The Slice Grid Screen

The Slice Grid screen is the main playing surface for the slicer track. It shows the track's slices as a grid of cells, one per slice, that you tap to trigger. Across the top, a knob bar gives you quick access to the track's level, pitch, and filter. From here you can play your sliced WAV from the touch screen or from MIDI, and drop into the Dashboard for deep editing with the **INST** button.

See and Touch



Slicer Slice Grid screen

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below).

SLICE GRID

The grid filling the main area of the screen, with one cell for each slice on the track. Each cell carries its slice number drawn in white, and the grid lines are drawn in the track's color. The grid shows only as many cells as the track has slices; the rest of the grid area is empty. Touch a cell to play the corresponding slice. While the slice plays, the cell fills with the track's color so you can see what is firing at a glance.

TOOLBAR

The toolbar along the bottom shows the track name.

Push

- **Down / Left** — slide the grid one row toward the lower-numbered slices.
- **Up / Right** — slide the grid one row toward the higher-numbered slices.
- **INST** — opens the Dashboard.

The arrows only have an effect when the track has more slices than fit on the screen at once.

Twist

Turn the knobs in the knob bar to edit the parameters in the list below.

Parameter	Description and Range	Modulation Target
Level	Output level of the track. Range: -96 dB to +12 dB.	Yes

Parameter	Description and Range	Modulation Target
Pitch	Pitch offset applied to every slice on the track. Range: -24 to +24 semitones.	Yes
Filter	Bipolar dual-filter cutoff. At 0% the filter is open; turning down sweeps in a low-pass filter and turning up sweeps in a high-pass filter. Range: -100% to +100%.	Yes
Res	Filter resonance. Range: 0% to 100%.	Yes

Playing Slices over MIDI

You can trigger the track's slices from an external MIDI keyboard or sequencer as well as from the grid. The slices are laid out chromatically starting at **C2** (MIDI note number 36):

- Note 36 (C2) plays slice 1.
- Note 37 (C#2) plays slice 2.
- Each higher note plays the next slice, one semitone per slice.

In other words, slice N is played by MIDI note $35 + N$. The mapping is fixed and does not follow the project key or scale, so a chromatic run up the keyboard from C2 steps through your slices in order.

Because MIDI note numbers stop at 127, only the first 92 slices can be reached this way (C2 through G9). Slices past that are still playable from the grid.

To play a slicer track over MIDI, set the track's MIDI input channel on the Track Configuration screen. See the [Track Configuration chapter](#) for the details.

The Dashboard

The Dashboard is where you do the deep editing for a slicer track. Reach it from the Slice Grid by pressing **INST** a second time. Press **INST** again from the Dashboard to return to the Slice Grid.

The Dashboard has four tabs along the bottom toolbar:

- **Sound** — the gain, pan, pitch, filter, polyphony, and beat-count settings.

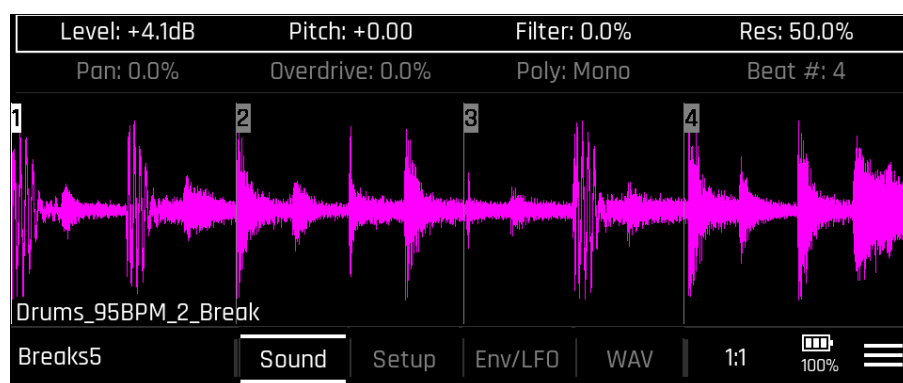
- **Setup** — quantization, sequencer mode, active slice, launch, loop, and sync options.
- **Env/LFO** — the track's envelope and LFO.
- **WAV** — the waveform display with the slice markers drawn on top, plus the slice-editing tools.

The track name appears at the left of the toolbar.

The Sound View

The Sound view is where you set the overall tone and behavior of the slicer track. Use it to dial in the track's output level, stereo position, pitch, and filter. You can also add overdrive, set how many slices can play at the same time, and tell blackbox 2 how many beats are in your WAV so playback stays in sync with your project tempo. Touch the **Sound** tab on the toolbar to open this view.

See and Touch



Slicer Sound view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below). Tap the knob bar to choose which row of parameters is controlled by the knobs.

WAVEFORM

The waveform display shows the full WAV file drawn in the track's color, with slice markers drawn as vertical lines. Each slice marker has a numbered flag at the top identifying the slice number. The currently selected slice is highlighted. Touch anywhere on the waveform to trigger playback of the slice at that position. A white vertical line marks the current playback position as a slice plays. Drag left or right to scroll through the waveform. Pinch with two fingers to zoom in or out horizontally.

Push

- **Up / Down** — toggles the selected row in the knob bar.
- **Left / Right** — selects the previous or next slice.

- **INST** — returns to the Slice Grid screen.

Twist

The knob bar has two rows. Tap the knob bar to toggle between them, or press the **Up** and **Down** arrow buttons. Turn the knobs to edit the parameters in the lists below.

Row 1 (Main)

Parameter	Description and Range	Modulation Target
Level	Output level of the track. Range: -96 dB to +12 dB.	Yes
Pitch	Pitch offset applied to every slice on the track. Range: -24 to +24 semitones.	Yes
Filter	Bipolar dual-filter cutoff. At 0% the filter is open; turning down sweeps in a low-pass filter and turning up sweeps in a high-pass filter. Range: -100% to +100%.	Yes
Res	Filter resonance. Range: 0% to 100%.	Yes

Row 2 (Effects)

Parameter	Description and Range	Modulation Target
Pan	Stereo position of the track. Range: full left to full right.	Yes
Overdrive	Amount of overdrive added to the track. Range: 0% to 100%.	No
Poly	How many slices the track can play at once. Options: Mono, Poly 2.	No

Parameter	Description and Range	Modulation Target
Beat #	Number of beats in the WAV file. Set to Auto to let blackbox 2 detect it. Used for tempo-synced playback.	No

The Setup View

The Setup view holds the playback options for the track's slices. Here you set how slices are timed, ordered, looped, and triggered, along with which slice is active. Touch the **Setup** tab on the toolbar to open this view.

See and Touch



Slicer Setup view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below). Tap the knob bar to choose which row of parameters is controlled by the knobs.

WAVEFORM

The waveform display is the same as on the Sound view. It shows the full WAV file drawn in the track's color, with slice markers drawn as vertical lines and the selected slice highlighted. Touch anywhere on the waveform to trigger playback of the slice at that position. A white vertical line marks the current playback position as a slice plays. Drag left or right to scroll, and pinch with two fingers to zoom in or out.

Push

- **Up / Down** — toggles the selected row in the knob bar.
- **Left / Right** — selects the previous or next slice.
- **INST** — returns to the Slice Grid screen.

Twist

The knob bar has two rows. Tap the knob bar to toggle between them, or press the **Up** and **Down** arrow buttons. Turn the knobs to edit the parameters in the lists below.

Row 1

Parameter	Description and Range	Modulation Target
Quant	Quantizes the timing of a triggered slice, delaying it to the next point on this grid so slices stay in sync with the clock. Set to None to play slices the instant they are triggered. Options: 2 bars, 1 bar, 1/2, 1/2T, 1/4, 1/4T, 1/8, 1/8T, 1/16, 1/16T, 1/32, 1/32T, 1/64, None.	No
Seq	Order the track plays slices in when it sequences them automatically. Options: None, Forward, Backwards, Random, Stagger.	No
Act Slice	The currently active slice number. Range: 1 to 128.	No
Launch	How each slice responds to a note-on and note-off. Trigger: the slice plays to its end regardless of when the note is released. Gate: the slice plays only while the note is held. Toggle: the first note-on starts the slice; the next note-on stops it.	No

Row 2

Parameter	Description and Range	Modulation Target
Loop	Whether each slice loops when it reaches its end. Options: Off, On.	No

Parameter	Description and Range	Modulation Target
Sync	When on, time-stretches each slice so its beats line up with the project tempo. When off, slices play at their natural length. Options: Off, On.	No

Using the Seq Parameter

Seq changes which slice a trigger actually plays, giving you a way to reorder slice playback without programming a sequence.

The track keeps a running sequence position — call it **X**. **X** starts at 0. Each time you trigger a slice, the track plays the slice whose number is the **triggered slice number plus X**, then advances **X** for the next trigger. The result wraps around the end of the slice list.

The **Seq** mode controls how **X** advances on each trigger:

- **None** — **X** stays at 0, so each trigger plays exactly the slice it selects.
- **Forward** — **X** increases by 1 with each trigger.
- **Backwards** — **X** decreases by 1 with each trigger.
- **Random** — **X** jumps to a random value with each trigger.
- **Stagger** — **X** shuffles up and down with each trigger, drifting through the slices in a jittery pattern.

For example, with **Seq** set to **Forward**, triggering pads 1 and 8 in this order plays a different slice each time as **X** climbs:

Slice triggered	Slice played	X
1	1	0
8	9	1
1	3	2
8	11	3

Slice triggered	Slice played	X
8	12	4
8	13	5
1	7	6

Every way of triggering the track runs through this same step, so **Seq** affects them all:

- **Slice Grid screen** — tapping a pad selects its slice, and **Seq** advances from there. With a stepping mode, tapping the same pad over and over walks through the slices in that order instead of replaying the one pad.
- **MIDI input** — an incoming note selects a slice (C2 is slice 1, chromatic upward), and **Seq** advances from there. Repeating the same note steps through the slices.
- **Sequences that trigger the track** — each step a sequence fires is a trigger, so **Seq** steps the slices the same way. A sequence that repeats a single note marches through the slices on its own.

Because the stepping is added to whatever slice each trigger selects, triggering different pads or notes shifts the starting point while **Seq** keeps advancing its position.

The Env/LFO View

Touch the **Env/LFO** tab on the toolbar to open this view. It is the same Env/LFO screen used by the one-shot and loop tracks. See the [One-Shot Track chapter](#) for the full description.

The WAV View

The WAV view is the slice-editing screen, where you set up the slices that the slicer track plays. Here you can scan the WAV for transients, divide it evenly on a grid, or add and delete slices by hand. The view shows an overview of the whole WAV plus a zoomable main waveform with the slice markers drawn on top. Touch the **WAV** tab on the toolbar to open this view.

See and Touch



Slicer WAV view

KNOB BAR

In the default mode the knob bar has a single row of four knobs for editing slices. Turn a knob to adjust its parameter (see Twist, below).

BUTTONS

A row of buttons sits just below the knob bar:

- **Delete** — deletes the currently selected slice, merging it into the slice before it.
- **Add** — adds a slice at the current playhead position, splitting the slice you are inside into two.
- **Scan** — switches the knob bar into Scan mode and runs the transient scanner over the WAV. Knob 1 becomes a **Threshold** that controls how sensitive the scanner is to transients. A higher threshold detects only the strongest transients and generates fewer slices, while a lower threshold picks up more transients and generates more slices. The scan starts when you push **OK**, replacing all previous slices. Touch anywhere outside the pop-up window to cancel the scan.
- **Grid** — switches the knob bar into Grid mode. Knob 1 becomes a **Count** that sets how many slices to divide the WAV into evenly. The grid is applied when you push **OK**, replacing all previous slices. Touch anywhere outside the pop-up window to cancel the grid.
- **Seq Restart** — resets the slice sequence to slice 1 the next time the track is triggered. This button is active only when the Seq parameter on the Setup view is not set to None. When Seq is None, the button is drawn with a dark gray frame and dark gray text to show that it has no effect.

WAVEFORM OVERVIEW

A small overview drawn in light gray below the buttons shows the whole WAV. The highlighted selection on the overview tells you where the main waveform is zoomed to. Touch the overview to jump the main waveform to that part of the WAV at the current zoom level.

WAVEFORM

The main waveform fills the rest of the screen, drawn in the track's color with vertical bars marking the slices. Each slice marker has a numbered flag at the top identifying the slice number. The WAV file name is drawn in the lower left of the waveform area. Touch the waveform to trigger the slice that contains the spot you touched. A white vertical line marks the current playback position as a slice plays. Drag left or right to scroll, and pinch with two fingers to zoom in or out.

Push

- **Up / Down** — unused on the WAV view.
- **Left / Right** — selects the previous or next slice.
- **INST** — returns to the Slice Grid screen.

Twist

Turn the knobs in the knob bar to edit the parameters in the list below. This is the default mode; turning on **Scan** or **Grid** swaps the knob bar to show the parameter for that mode.

Parameter	Description and Range	Modulation Target
Sel Slice	The currently selected slice number. Range: 1 to 128.	No
Slice Pos	The sample position of the selected slice. Range: 0 to the length of the WAV, in samples.	No
Scroll	Turns auto-scroll on and off. When on, the main waveform follows the playhead as a slice plays.	No
Play Thru	When on, playback continues past the end of a slice into the next slice instead of stopping at the slice.	No

The Dashboard Menu

The menu icon at the far right of the toolbar opens the Dashboard menu. The same menu is available from all four Dashboard views. Touch the menu icon to open it. The menu has these items:

- **Unload** — removes the WAV from the track.
- **Rename WAV** — renames the WAV file behind the track.
- **Edit WAV** — opens the Edit WAV screen. See the [Working with WAV Files chapter](#) for the details.
- **Modulation** — opens the modulation matrix for the track so you can route LFOs, envelopes, and other modulation sources to the track's parameters.
- **Copy** — copies the track's WAV, its slice markers, and most of its settings — level, pitch, pan, filter, the Env/LFO settings, FX sends, and the modulation matrix — to the clipboard.
- **Paste** — pastes the clipboard into this slicer track, replacing whatever was there. What comes across depends on what you copied:
 - **From a slicer or shredder track:** the WAV, its slice markers, and the shared settings.
 - **From a one-shot or loop track:** the WAV and the shared settings, but no slice markers. The pasted WAV starts as a single slice that you can then scan or grid into more.
- **Clear Slices** — removes every slice marker from the WAV, leaving you with a single slice that covers the whole file.

The **Cut** item is grayed out on slicer tracks. **Unload**, **Rename WAV**, and **Copy** are grayed out when the track has no WAV loaded. **Paste** is grayed out unless you have a sample on the clipboard.

The Sample Recorder

Slicer tracks can also capture their source WAV through the dedicated **Sample Recorder**. This is the same recorder used by the other sample-based tracks — see the [Working with WAV Files chapter](#) for the full description.

To reach the recorder from a slicer track:

1. Press the **TRACKS** button and select the slicer track you want to record into.
2. Open the WAV File Browser for the track. The Browser opens automatically when you create a new slicer track, or when you open the Dashboard for a slicer track that does not yet have a WAV loaded. The Browser's **Record** button is the entry point for the recorder.
3. Touch **Record**. The recorder opens.

When the recording finishes, blackbox 2 takes you to the slicer Dashboard's WAV view so you can scan or grid the new WAV into slices.

The Shredder Track

A *shredder* track is a new instrument that combines slice playback with a granular engine. Like a slicer track, it operates on a single WAV file divided into up to 128 slices that you trigger from a grid. Unlike a slicer track, each slice is played back through a granular synthesizer that breaks the audio into small grains and plays them back, so you can scrub, detune, and reshape each slice independently of its original length. Shredder tracks are the natural fit for evolving textures, drawn-out atmospheric beds, and aggressive granular reworkings of breakbeats and vocal samples.

All slices on a shredder track share one set of envelope, filter, pitch, granular, and effects parameters, but each slice has its own start position inside the WAV.

Shredder tracks share most of their screens with the slicer track. The Slice Grid screen, the Edit WAV screen, and the overall layout of the Dashboard are the same. The main difference is the Dashboard's **Grain** tab, which replaces the slicer's **Setup** tab with the granular engine's parameters.

Pressing the **INST** button on the button strip cycles through two screens:

- The **Slice Grid** screen — the main playing surface.
- The **Dashboard** — a four-tab deep-edit screen with the granular parameters on the Grain view.

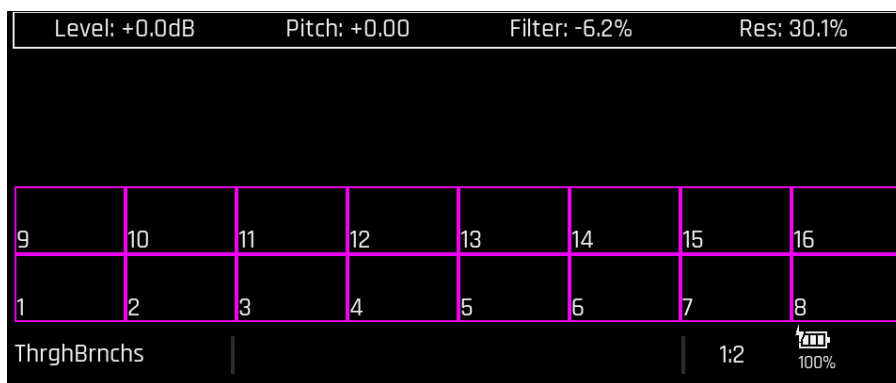
The **Edit WAV** screen is also available for shredder tracks. It opens from the Dashboard's menu and lets you trim and normalize the WAV file. See the [Working with WAV Files chapter](#) for the full description; it is the same screen for shredders.

You can reach the first INST screen for a shredder track in two ways: double-tap the track on the Tracks screen, or select the track and press the **INST** button on the button strip.

The Slice Grid Screen

The Slice Grid screen is the main playing surface for the shredder track. It shows the track's slices as a grid of cells, one per slice, that you tap to trigger. Across the top, a knob bar gives you quick access to the track's level, pitch, and filter. From here you can play your sliced WAV from the touch screen or from MIDI, and drop into the Dashboard for deep editing with the **INST** button.

See and Touch



Shredder Slice Grid screen

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below).

SLICE GRID

The grid filling the main area of the screen, with one cell for each slice on the track. Each cell carries its slice number drawn in white, and the grid lines are drawn in the track's color. The grid shows only as many cells as the track has slices; the rest of the grid area is empty. Touch a cell to play the corresponding slice. While the slice plays, the cell fills with the track's color so you can see what is firing at a glance.

TOOLBAR

The toolbar along the bottom shows the track name with a small color swatch next to it.

Push

- **Down / Left** — slide the grid one row toward the lower-numbered slices.
- **Up / Right** — slide the grid one row toward the higher-numbered slices.
- **INST** — opens the Dashboard.

The arrows only have an effect when the track has more slices than fit on the screen at once.

Twist

Turn the knobs in the knob bar to edit the parameters in the list below.

Parameter	Description and Range	Modulation Target
Level	Output level of the track. Range: -96 dB to +12 dB.	Yes
Pitch	Pitch offset applied to every slice on the track. Range: -24 to +24 semitones.	Yes
Filter	Cutoff frequency of the track's filter.	Yes
Res	Filter resonance. Range: 0% to 100%.	Yes

How many slices the shredder can play at the same time is set by the **Poly** knob on the Dashboard's Sound view, just as it is on the other track types.

Playing Slices over MIDI

You can trigger the track's slices from an external MIDI keyboard or sequencer as well as from the grid. The slices are laid out chromatically starting at **C2** (MIDI note number 36):

- Note 36 (C2) plays slice 1.
- Note 37 (C#2) plays slice 2.
- Each higher note plays the next slice, one semitone per slice.

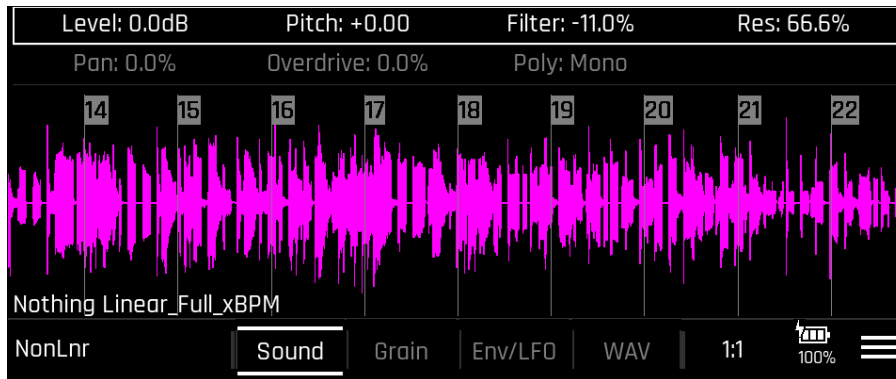
In other words, slice N is played by MIDI note $35 + N$. The mapping is fixed and does not follow the project key or scale, so a chromatic run up the keyboard from C2 steps through your slices in order.

Because MIDI note numbers stop at 127, only the first 92 slices can be reached this way (C2 through G9). Slices past that are still playable from the grid.

To play a shredder track over MIDI, set the track's MIDI input channel on the Track Configuration screen. See the [Track Configuration chapter](#) for the details.

The Dashboard

The Dashboard is where you do the deep editing for a shredder track. Reach it from the Slice Grid by pressing **INST** a second time. Press **INST** again from the Dashboard to return to the Slice Grid.



Shredder Dashboard Sound view

The Dashboard has four tabs along the bottom toolbar:

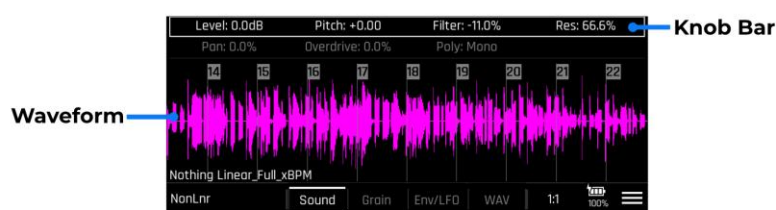
- **Sound** — the gain, pan, pitch, filter, and polyphony settings.
- **Grain** — the granular engine's parameters.
- **Env/LFO** — the track's envelope and LFO.
- **WAV** — the waveform display with the slice markers drawn on top, plus the slice-editing tools.

The track name appears at the left of the toolbar.

The Sound View

The Sound view is where you set the overall tone and behavior of the shredder track. Use it to dial in the track's output level, stereo position, and pitch before the granular engine gets involved. You can also enable the filter here and set how many slices can play at the same time.

See and Touch



Shredder Sound view with callouts

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below). Tap the knob bar to choose which row of parameters is controlled by the knobs.

WAVEFORM

The waveform display shows the full WAV file drawn in the track's color, with slice markers drawn as vertical lines. Each slice marker has a numbered flag at the top identifying the slice number. The currently selected slice is highlighted. The WAV file name is displayed in the lower left of the waveform area. Touch anywhere on the waveform to trigger playback of the slice at that position. A white vertical line marks the current playback position as a slice plays. Drag left or right to scroll through the waveform. Pinch with two fingers to zoom in or out horizontally.

Push

- **Up / Down** — toggles the selected row in the knob bar.
- **Left / Right** — selects the previous or next slice. The selected slice changes on the waveform display in the WAV view.
- **INST** — returns to the Slice Grid screen.

Twist

Turn the knobs in the knob bar to edit the parameters in the list below.

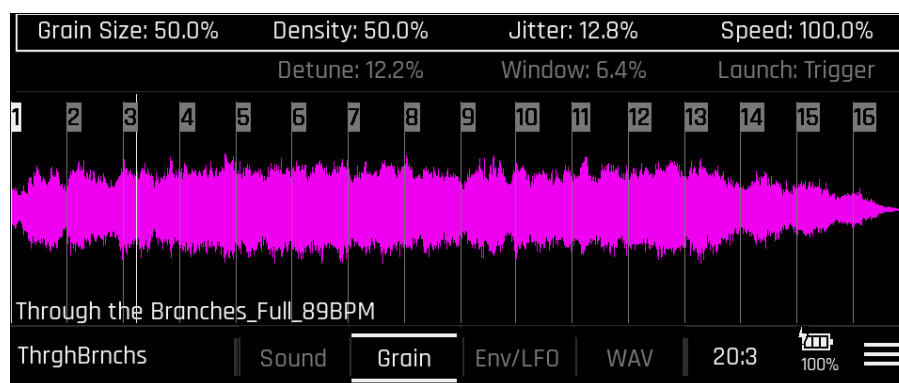
Parameter	Description and Range	Modulation Target
Level	Output level of the track. Range: -96 dB to +12 dB.	Yes
Pan	Stereo position of the track. Range: full left to full right.	Yes
Pitch	Pitch offset applied to every slice on the track. Range: -24 to +24 semitones.	Yes
Filter	Enables or disables the track's filter.	No
Res	Filter resonance. Range: 0% to 100%.	Yes

Parameter	Description and Range	Modulation Target
Overdrive	Overdrive amount for the track. Range: 0% to 100%.	No
Poly	How many slices the shredder can play at once. Options: Mono, Poly 2.	No

The Grain View

The Grain view is where you shape the granular engine that gives the shredder track its character. Here you set the size, density, and timing of the grains that each slice is broken into, along with the playback speed of the grain stream. A second row of parameters adds detuning, the grain window size, and the launch behavior for each slice. Touch the **Grain** tab on the toolbar to open this view.

See and Touch



Shredder Grain view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below). Tap the knob bar to choose which row of parameters is controlled by the knobs.

WAVEFORM

The waveform display fills the main area below the knob bar and shows the full WAV file drawn in the track's color, with the slice markers drawn as vertical lines. Each slice marker has a numbered flag at the top identifying the slice number. The WAV file name is displayed in the lower left of the waveform area. Touch anywhere on the waveform to trigger playback of the slice at that position. A white vertical line marks the current playback position as a slice plays. Drag left or right to scroll, and pinch with two fingers to zoom in or out.

Push

- **Up / Down** — toggles the selected row in the knob bar.
- **Left / Right** — selects the previous or next slice.
- **INST** — returns to the Slice Grid screen.

Twist

The knob bar has two rows. Tap the knob bar to toggle between them, or press the **Up** and **Down** arrow buttons. Turn the knobs to edit the parameters in the lists below.

Row 1 (Main)

Parameter	Description and Range	Modulation Target
Grain Size	Length of each grain. Range: 0% to 100%.	No
Density	How many grains play per second. Higher densities produce smoother textures at the cost of more CPU. Range: 0% to 100%.	No
Jitter	Amount of random timing variation between grains. Range: 0% to 100%.	No
Speed	Playback speed of the grain stream relative to the source slice. At 100% the slice plays at its original speed; lower values slow it down, higher values speed it up. Range: 0% to 200%.	No

Row 2 (Effects)

Parameter	Description and Range	Modulation Target
Detune	Amount of random pitch variation applied to each grain. Range: 0% to 100%.	No

Parameter	Description and Range	Modulation Target
Window	The length of file on either side of the current playback position from which the grains are selected. When set to 0%, the grains are always pulled from the current playback position in the WAV file. When set to 100%, the grains are pulled from a window of about a few seconds around the current playback position. Range: 0% to 100%.	No
Launch	How each slice responds to a note-on and note-off. Trigger: the slice plays to its end regardless of when the note is released. Gate: the slice plays only while the note is held and stops when it is released. Toggle: the first note-on starts the slice; the next note-on stops it.	No

Knob 1 on Row 2 is unused on the shredder Grain view.

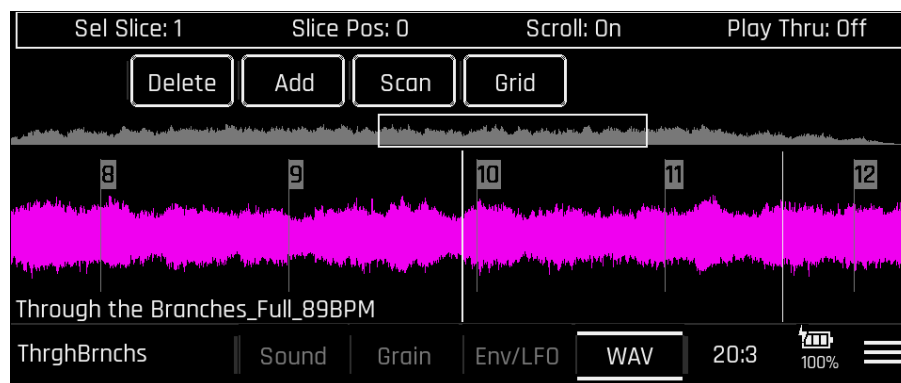
The Env/LFO View

Touch the **Env/LFO** tab on the toolbar to open this view. It is the same Env/LFO screen used by the one-shot and loop tracks. See the [One-Shot Track chapter](#) for the full description.

The WAV View

The WAV view is the slice-editing screen, where you set up the slices that the shredder track plays. Here you can scan the WAV for transients, divide it evenly on a grid, or add and delete slices by hand. The view shows an overview of the whole WAV plus a zoomable main waveform with the slice markers drawn on top. Touch the **WAV** tab on the toolbar to open this view.

See and Touch



Shredder WAV view

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below).

BUTTONS

A row of buttons sits just below the knob bar:

- **Delete** — deletes the currently selected slice, merging it into the slice before it.
- **Add** — adds a slice at the current playhead position, splitting the slice you are inside into two.
- **Scan** — switches the knob bar into Scan mode and runs the transient scanner over the WAV. Knob 1 becomes a **Threshold** that controls how sensitive the scanner is to transients. A higher threshold detects only the strongest transients and generates fewer slices, while a lower threshold picks up more transients and generates more slices. The scan starts when you push **OK**, replacing all previous slices. Touch anywhere outside the pop-up window to cancel the scan.
- **Grid** — switches the knob bar into Grid mode. Knob 1 becomes a **Count** that sets how many slices to divide the WAV into evenly. The grid is applied when you push **OK**, replacing all previous slices. Touch anywhere outside the pop-up window to cancel the grid.

WAVEFORM OVERVIEW

A small overview drawn in light gray below the buttons shows the whole WAV. The highlighted selection on the overview tells you where the main waveform is zoomed to. Touch the overview to jump the main waveform to that part of the WAV at the current zoom level.

WAVEFORM

The main waveform fills the rest of the screen, drawn in the track's color with vertical bars marking the slices. Each slice marker has a numbered flag at the top identifying the slice number. The WAV file name is drawn at the lower left of the

waveform area. Touch the waveform to start playback from the exact spot you touched; playback ignores the slice markers and does not start or stop at them. A white vertical line marks the current playback position as the waveform plays. Drag left or right to scroll, and pinch with two fingers to zoom in or out.

Push

- **Up / Down** — unused on the WAV view.
- **Left / Right** — selects the previous or next slice.
- **INST** — returns to the Slice Grid screen.

Twist

Turn the knobs in the knob bar to edit the parameters in the list below. This is the default mode; turning on **Scan** or **Grid** swaps the knob bar to show the parameter for that mode.

Parameter	Description and Range	Modulation Target
Sel Slice	The currently selected slice number.	No
Slice Pos	The sample position of the selected slice, in samples.	No
Scroll	Turns auto-scroll on and off. When on, the main waveform follows the playhead as a slice plays.	No
Play Thru	When on, playback continues past the end of a slice into the next slice instead of stopping at the slice.	No

The Dashboard Menu

The menu icon at the far right of the toolbar opens the Dashboard menu. The same menu is available from all four Dashboard views. Touch the menu icon to open it. The menu has these items:

- **Unload** — removes the WAV from the track.
- **Rename WAV** — renames the WAV file behind the track.
- **Edit WAV** — opens the Edit WAV screen. See the [Working with WAV Files chapter](#) for the details.

- **Modulation** — opens the modulation matrix for the track so you can route LFOs, envelopes, and other modulation sources to the track's parameters.
- **Copy** — copies the track's WAV, its slice markers, and most of its settings — level, pitch, pan, filter, the Env/LFO settings, FX sends, and the modulation matrix — to the clipboard. The Grain-view granular parameters are not included.
- **Paste** — pastes the clipboard into this shredder track, replacing whatever was there. What comes across depends on what you copied:
 - **From a shredder or slicer track:** the WAV, its slice markers, and the shared settings — level, pitch, pan, filter, the Env/LFO settings, FX sends, and the modulation matrix.
 - **From a one-shot or loop track:** the WAV and the same shared settings, but no slice markers. The pasted WAV starts as a single slice that you can then scan or grid into more.

In every case the Grain-view granular parameters keep their current values on this track; they are never carried over by a paste.

- **Clear Slices** — removes every slice marker from the WAV, leaving you with a single slice that covers the whole file.

The **Cut** item is grayed out on shredder tracks. **Unload**, **Rename WAV**, and **Copy** are grayed out when the track has no WAV loaded. **Paste** is grayed out unless you have a sample on the clipboard.

The Sample Recorder

Shredder tracks can also capture their source WAV through the dedicated **Sample Recorder**. This is the same recorder used by the other sample-based tracks — see the [Working with WAV Files chapter](#) for the full description.

To reach the recorder from a shredder track:

1. Press the **TRACKS** button and select the shredder track you want to record into.
2. Open the WAV File Browser for the track. The Browser opens automatically when you create a new shredder track, or when you open the Dashboard for a shredder track that does not yet have a WAV loaded. The Browser's **Record** button is the entry point for the recorder.
3. Touch **Record**. The recorder opens.

When the recording finishes, blackbox 2 takes you to the shredder Dashboard's WAV view so you can scan or grid the new WAV into slices.

The External Track

An *external* track connects blackbox 2 to the gear around it instead of playing audio on blackbox 2 itself. It does two things, each useful in its own right: it sends MIDI out to an outboard instrument, and it brings external audio in through blackbox 2's mixer and effects. The track has a MIDI input channel, a MIDI output channel, and an audio input. You can use MIDI Out and Audio In together or choose just one.

On the MIDI side, an external track lets you sequence and perform a hardware synthesizer or a software instrument running on a computer straight from blackbox 2's on-screen keyboard and button grid. On the audio side, it lets you bring an external source — a guitar, a drum machine, another synth — into blackbox 2 to run through its effects and sit in the mix alongside your other tracks. Pair the two and you sequence an outboard instrument while its audio returns through the mixer; use just one and you can drive a synth that is mixed elsewhere, or process incoming audio without sequencing any MIDI.

External tracks have no patches of their own. Pressing the **INST** button on the button strip cycles through two screens:

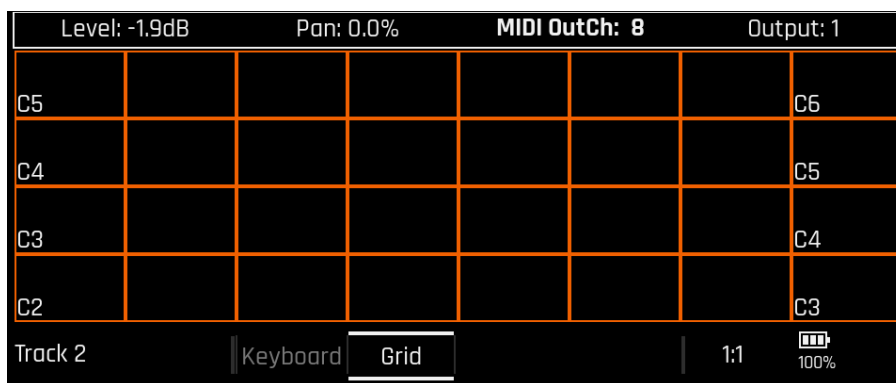
- The **Keys** screen — a piano keyboard or button grid that plays the track. Touching a key or cell sends that note out over MIDI to the outboard instrument, so you can audition and perform the external device straight from blackbox 2.
- The **External Dashboard** — where you set the track's MIDI channels and audio routing and watch the level coming back from the outboard instrument.

You can reach the first INST screen for an external track in two ways: double-tap the track on the Tracks screen, or select the track and press the **INST** button on the button strip.

The Keys Screen

The Keys screen is where you play the external track, sending its notes out over MIDI to the outboard instrument. Like the multisample track, it offers a piano keyboard or a button grid, switchable from the toolbar tabs. Across the top, a knob bar gives you quick access to the track's level, pan, MIDI output channel, and output bus.

See and Touch



External track Keys screen

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below).

PLAYING SURFACE

The main area of the screen is the playing surface, drawn in one of two layouts:

- **Keyboard** — a 25-key piano keyboard. The first C key is labeled with its note name and octave (for example **C4**).
- **Grid** — a button grid that shows one octave of notes in each row. Which notes appear, and where the root falls, follow the **Root Note** and **Scale** set on the Project Settings screen. The grid includes only the notes in the scale, so every cell you touch is in key — you can't play a wrong note.

Touch a key or cell to send that note out over MIDI to the outboard instrument. Blackbox 2 remembers which layout and octave you used last on each track.

TOOLBAR

The toolbar along the bottom shows the track name at the left and two layout tabs: **Keyboard** and **Grid**. Touch a tab to switch layouts; the active layout's tab is highlighted.

Push

- **Up / Down** — slide the keyboard or grid by one octave.
- **Left / Right** — in the **Keyboard** layout, slide by one semitone; in the **Grid** layout, slide by one octave.
- **INST** — opens the External Dashboard.

Twist

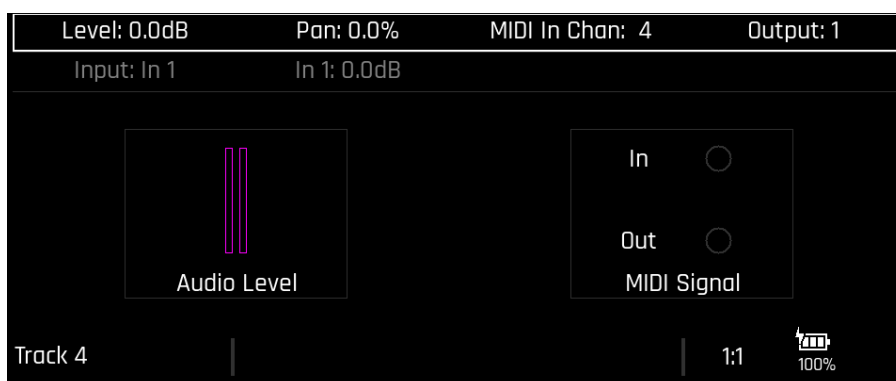
Turn the knobs in the knob bar to edit the parameters in the list below.

Parameter	Description and Range
Level	Output level of the track. Range: -60 dB to +6 dB.
Pan	Stereo position of the track. Range: full left to full right.
MIDI OutCh	The MIDI channel the track sends notes out on. Options: None, or 1 through 16.
Output	The output bus the track's audio is routed to. Options: 1, 2, 3.

The External Dashboard

The External Dashboard is where you set the track's MIDI input channel and output routing and watch the audio and MIDI activity coming from the outboard instrument. Touch **INST** from the Keys screen to reach it.

See and Touch



External Dashboard

KNOB BAR

Turn a knob to adjust its parameter (see Twist, below).

AUDIO LEVEL

The **Audio Level** box on the left holds a stereo level meter in the track color. It shows the level of the audio coming back in through the audio input this track is assigned to, so you can see whether the outboard instrument is feeding audio to

blackbox 2 and where its level sits. Watch the meter for clipping — shown as a red tip at the top of the meter — and turn the incoming level down so the meter stays out of the red.

MIDI SIGNAL

The **MIDI Signal** box on the right has two indicator circles labeled **In** and **Out**. Each circle lights up in the track color whenever blackbox 2 sees a MIDI event on the corresponding channel and port, and dims back to black once the channel has been quiet for a moment. Use these to confirm MIDI is flowing in both directions when you troubleshoot an outboard rig.

TOOLBAR

The toolbar along the bottom shows the track name.

Push

- **INST** — returns to the Keys screen.

Twist

Parameter	Description and Range
Level	Output level of the track. Range: -60 dB to +6 dB.
Pan	Stereo position of the track's audio coming back from the outboard instrument. Range: full left to full right.
MIDI In Chan	The MIDI channel blackbox 2 listens on for this track. Options: None, or 1 through 16.
Output	The output bus the track's audio is routed to. Options: 1, 2, 3.
Input	The audio input the outboard instrument's return feeds into. Options: In 1 (the stereo audio in jack), USB (the USB audio in), In 1L (just the left side of the audio input), USB L (just the left side of USB audio).

Parameter	Description and Range
Input Gain	Gain on the audio coming back from the outboard instrument, whichever input it arrives on. This is the level <i>into</i> the track, not its playback volume; that is the Level knob. Turn it down if the Audio Level meter shows red. Range: -60 dB to +12 dB.

The knob bar has two rows. Touch a row, or press the **Up** and **Down** arrow buttons, to put the knobs on that row. The track's MIDI output channel lives on the Track Configuration screen rather than on the Dashboard. Reach it from the Tracks screen's menu by selecting the track and touching **Config Track**.

Working with WAV Files

Blackbox 2 stores the samples your tracks play as WAV files on the microSD card. The one-shot, loop, multisample, slicer, and shredder tracks share the same tools for managing those files: renaming them and trimming them on the Edit WAV screen. The one-shot, loop, slicer, and shredder tracks also capture new audio with the Sample Recorder; multisample tracks use the Multisample Recording wizard instead (see the [Multisample Track chapter](#)). This chapter gathers those shared tools.

Where WAV Files Live

Every project has its own folder on the microSD card, and the samples you record or edit for that project live inside it. Blackbox 2 also ships with a factory library of patches whose WAV files live in shared **Patches** folders, and a file can also belong to a different project's folder.

Alongside a WAV file you may notice a matching **<name>.wav.pk** file. Blackbox 2 creates it to cache the waveform shape so the file draws faster, and it is safe to delete. See the [Managing the microSD Card chapter](#) for the details.

This matters because some operations would change a file that other projects or patches share. To keep a shared file safe, blackbox 2 follows one rule: **an operation that would modify a WAV file outside the current project copies the file into the current project's folder first, and works on the copy.** The original shared file is always left untouched. Both **Rename WAV** and the **Edit WAV** screen follow this rule.

Renaming a WAV File

Rename WAV appears in the menu on the sample-bank and Dashboard screens of one-shot, loop, multisample, slicer, and shredder tracks. It opens the naming keyboard with the current file name; type a new name and touch **Enter**. What happens next depends on where the file lives:

- **The file is already in the current project's folder** — blackbox 2 simply renames it in place.
- **The file lives anywhere else** (a factory Patches folder, or another project's folder) — blackbox 2 does not rename the original. Instead it copies the file into the current project's folder under the new name and points the track at the copy, leaving the shared original untouched.

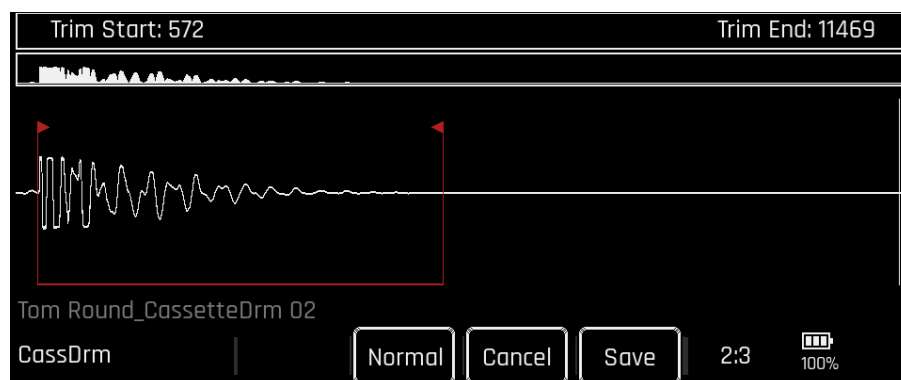
The Edit WAV Screen

The Edit WAV screen lets you trim a sample down to just the part you want and optionally normalize it. The same screen is used for WAV editing on one-shot,

loop, multisample, slicer, and shredder tracks. On a multisample track it trims the WAV currently selected on the Dashboard's WAV view.

Reach Edit WAV from the Dashboard's menu — touch **Edit WAV** while you have the sample you want to trim selected.

See and Touch



Edit WAV screen

The waveform fills the middle of the screen, with **red brackets** marking the trim start and end and a gray **overview** strip above it. The toolbar along the bottom has the **Normalize**, **Cancel**, and **Save** buttons, and the WAV file name appears at the lower-left.

- **Pinch and swipe** on the main waveform to control the zoom and position.
- **Touch and drag** the gray overview to jump the main waveform to that part of the sample at the current zoom level.
- **Tap** the main waveform to start playing the sample from the spot you tapped. Tap near the very left to play from the start regardless of where exactly you hit.

The toolbar buttons:

- **Normalize** — toggles whether blackbox 2 normalizes the audio level when it saves. The button lights up when normalize is on.
- **Cancel** — throws away your edits and returns to the Dashboard with the WAV file unchanged.
- **Save** — writes the audio inside the brackets back to the WAV file, then returns to the Dashboard. If **Normalize** is on, blackbox 2 applies a gain based on the loudest peak of the *whole original file* — measured when you opened the Edit WAV screen, not just the bracketed region — and writes out the trimmed region with that gain applied. **Save is destructive**: the audio outside the brackets is gone for good.

Following the file-location rule above, if the WAV file lives outside the current project's folder, blackbox 2 copies it into the current project's folder before making the edit, so the shared file is left alone.

Twist

- **Knob 1: Trim Start** — the sample position of the new start.
- **Knob 4: Trim End** — the sample position of the new end.

The Sample Recorder

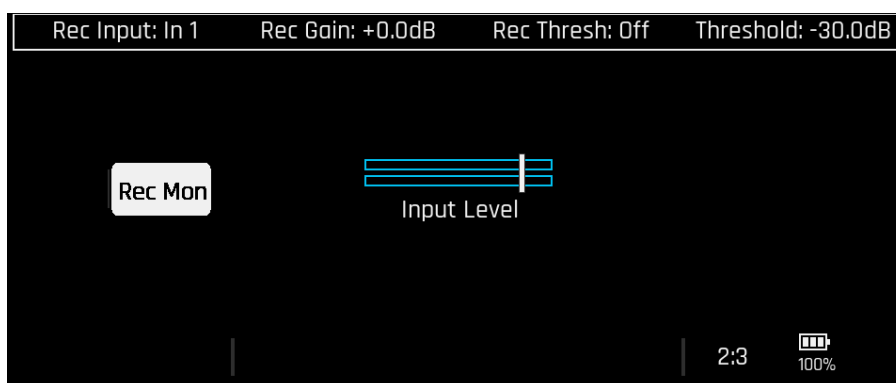
The **Sample Recorder** is a dedicated, focused screen for capturing a new WAV file into the project from the audio input or USB. It is shared by the one-shot, loop, slicer, and shredder tracks. Multisample tracks capture audio with the Multisample Recording wizard instead — see the [Multisample Track chapter](#). Use it when you want to record into a track from an external source.

You can also resample blackbox 2's own output: arm the sequences, loops, loop groups, or songs you want to capture before you open the Sample Recorder, then record them as they play.

You reach the recorder from the WAV File Browser:

1. Press the **TRACKS** button and select the track you want to record into.
2. Open the WAV File Browser for the track. The Browser's **Record** button is the entry point for the recorder.
3. Touch **Record**. A naming screen appears.
4. Type a name for the file you are about to record and touch **Enter**. The Sample Recorder opens.

See and Touch



Sample Recorder

The knob bar sits across the top. The middle of the screen shows a stereo **input level meter** so you can set the gain to fit the source, with a **Rec Mon** button to its left. While recording, a red status message reads *Recording bar:beat* on the right side, counting up as it captures.

- Touch **Rec Mon** to toggle input monitoring on and off so you can hear what the recording will capture before you commit to it. The button lights up when monitoring is on.

Push

- **REC + PLAY** — starts recording.
- **STOP** — ends the recording. If the recording length is set to a fixed value rather than **Custom**, the recording also stops on its own when it reaches that length.

Twist

- **Knob 1: Rec Input** — the audio source for the recording: **In 1** (the audio input jack) or **USB** for a stereo source; **In 1L** or **USB L** for that source in mono, using just its left channel; or **Resample** to capture blackbox 2's own output.
- **Knob 2: Rec Gain** — the input gain applied to the audio being recorded, in dB.
- **Knob 3: Rec Thresh** — whether the recording is armed to start when the audio crosses a threshold rather than firing immediately.
- **Knob 4: Threshold** — the threshold level for the armed recording, in dB.

Recording a Sample

1. Connect your source to the input you picked with the **Rec Input** knob.
2. Tap **Rec Mon** to enable monitoring and play your source. Adjust **Rec Gain** so the level meter sits as high as it will go without clipping.
3. To wait for the source to cross a level before recording starts, turn **Rec Thresh** on and set the **Threshold** as needed. Otherwise leave **Rec Thresh** off and the recorder starts as soon as you push **REC + PLAY**.
4. Push **REC + PLAY** to start, and **STOP** to end.

When the recording finishes, blackbox 2 takes you to the track's Dashboard for the newly recorded sample. If you want to rename it afterward, use **Rename WAV** from the Dashboard's menu.

The Launch Screen

Overview

The Launch screen is where you trigger your sequences live. It lays the four tracks out as columns — the same column order as the Tracks screen — and gives each track a grid of sequence slots you can fire off as you perform. Launch one sequence per track, switch them on the fly, and build up an arrangement by ear.

Each track column holds up to eight sequences in a grid two wide and four tall. Tapping a slot launches that track's sequence; it starts in sync with the project and loops until you stop it or launch a different one. For a Loop track, the slots hold the track's loop groups instead of sequences, so you launch a loop group the same way.

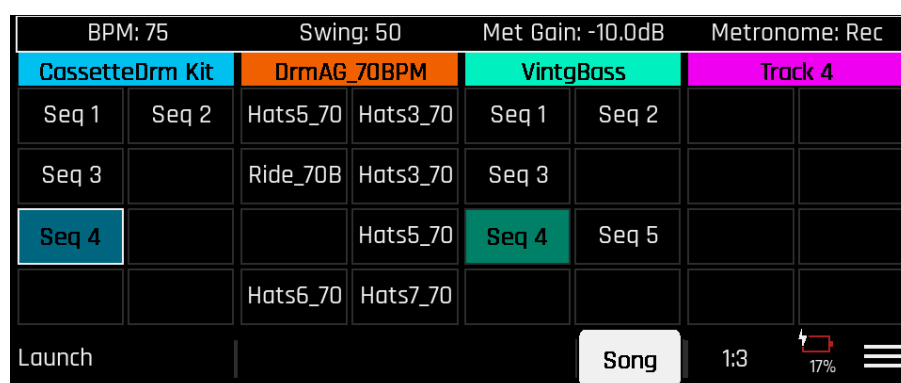
Launched sequences and loop groups play only while the transport is running. Press **PLAY** to start everything moving and **STOP** to halt it.

The Launch screen works hand in hand with three other screens:

- The [Sequencing chapter](#) covers how to build and edit the sequences you launch here. Press **SEQ** to open the sequencer for the selected slot.
- The [Loop Groups chapter](#) covers loop groups, which fill the slots on a Loop track.
- The [Song Mode chapter](#) covers scenes and songs. You can capture the current launch state into a scene with **Snap Scene**.

Reach the screen by pressing the **LAUNCH** button on the button strip.

See and Touch



Launch screen

- **Knob bar** along the top. Turn a knob to adjust its parameter (see Twist, below).
- **Track columns** fill the main area, one column per track. Each column has a track-name header at the top, drawn in the track color, and below it a grid

of eight sequence slots, two across and four down. Each filled slot shows its sequence name; on a Loop track the slots show loop groups.

- **Toolbar** along the bottom has the **Song** button and the menu icon.

The selected slot is outlined with a white frame. An armed slot — one waiting to start — shows a dim track-color background. A slot that is playing fills its background with the bright track color from left to right as a progress meter, showing how far the sequence has played.

Launching and Stopping

Sequences and loop groups play only while the transport is running. Press **PLAY** to start the transport and **STOP** to stop it (see Push, below). Only one sequence or loop group per track plays at a time, so launching or arming one replaces whatever else is set on that track.

- While the transports are stopped, tap a slot to arm it so it starts when you press **PLAY**. All other sequences or loop groups in that track will be disarmed.
- While the transports are running, tap a slot to launch that sequence or loop group. It starts on the next quantize boundary and then loops. For sequences, the boundary is set by the sequence's **Quant Size** on the Seq screen and can differ from one sequence to the next (see the [Sequencing chapter](#)). This will stop all other sequences for that track. For loop groups, the boundary is the smallest Quant Size assigned to any of the loops in the group.
- Tap a different slot in the same track to switch that track to another sequence.
- Tapping a slot that is already playing does nothing; it keeps playing.
- Tap a track's **header** to stop all of that track's sequences or loop groups.

Each track plays independently, so you can have a sequence running on every track at once and change any of them without interrupting the others.

When Song mode is on, the song progression drives which sequences play, and it may override what you trigger on the Launch screen. Turn Song mode off (with the **Song** button) to perform freely from the Launch screen.

When you start recording from another screen with **REC + PLAY**, any armed sequences, loop groups, or the song play along while you record. If you want nothing else playing while you record, turn Song mode off and clear the armed state of all sequences and loop groups by pressing and holding **STOP**.

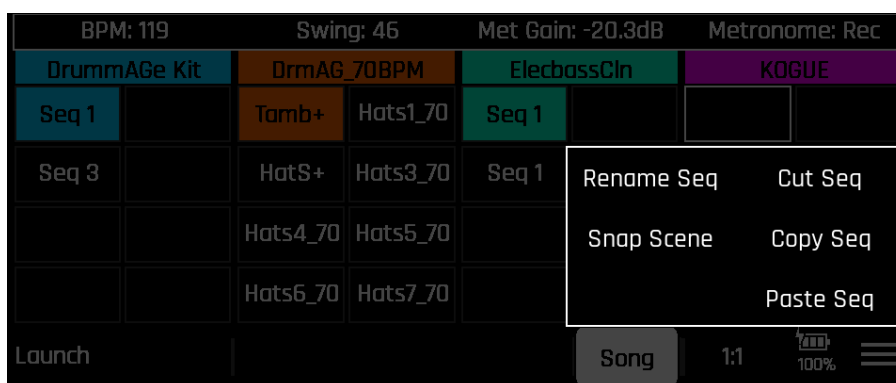
Creating a Sequence from an Empty Slot

Tapping an empty slot selects it but does not start anything. To fill it, press **SEQ** with the empty slot selected; you can then create a sequence — or a loop group on a Loop track — for that slot and edit it on the sequencer.

Snapping a Scene

The menu's **Snap Scene** command copies the current launch state — the sequence playing on each track — to the clipboard. Go to the Song or Scene screen, select a scene, and paste to set that scene to the snapped state. See the [Song Mode chapter](#) for how scenes and songs work.

The menu also holds the sequence clipboard commands — **Rename Seq**, **Cut Seq**, **Copy Seq**, and **Paste Seq**. On a Loop track the menu changes to the loop-group commands **Rename Group**, **Copy Group**, **Clear Group**, and **Paste Group**.



The Launch screen menu

Push

- **LAUNCH** — opens the Launch screen.
- **Left / Right / Up / Down** — move the selection through a track's grid of slots. Crossing the left or right edge of a column moves to the adjacent track at the same row. This moves the selection only; it does not launch anything.
- **SEQ** — opens the sequencer for the selected sequence, or the Loop Group editor for a Loop track, where you create or edit the slot's contents.
- **PLAY** — starts the transport so the launched sequences and loop groups play.
- **STOP** — controls how playback stops:
 - Press once to stop the playing sequences and loop groups at the next quantization boundary.
 - Press a second time to stop playback immediately.

- Press and hold to clear the armed state of all sequences and stop playback at the next quantization boundary.

Twist

Parameter	Description and Range
BPM	The project tempo, in beats per minute. Range: 40 to 250.
Swing	The swing amount applied to playback. Range: 1 to 99, with 50 being straight (no swing).
Met Gain	The output level of the metronome, in dB.
Metronome	When the metronome sounds. Range: Off (never), Rec (while recording), Play (while playing).

Sequencing

Overview

A *sequence* records the notes or hits for a single track. Each track can hold up to eight sequences, which you select and launch from the Launch screen (see the [Launch Screen chapter](#)).

Press **SEQ** to edit the selected sequence. The sequencer you get depends on the track type:

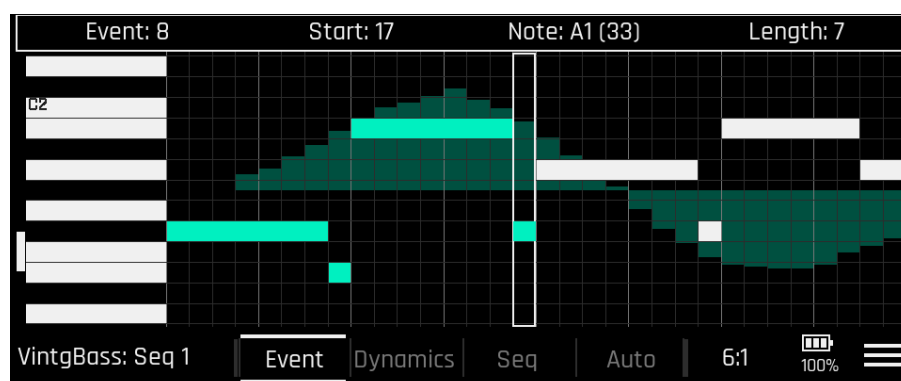
Track type	Sequencer
One-shot	Step Sequencer, then Pad Sequencer (press SEQ again)
Multisample, Slicer, Shredder, External	Keys Sequencer
Loop	No note sequencing — SEQ opens the Loop Group editor (see the Loop Groups chapter)

- For one-shot tracks, **SEQ toggles** between the Step and Pad sequencers, and the choice is saved with the track.
- To record live, press **REC + PLAY**, press **INST**, and play the instrument. You can also record MIDI received on the track's channel.

The Keys Sequencer

Used by multisample, slicer, shredder, and external tracks.

See and Touch



Keys Sequencer, Event tab

- A piano-roll grid fills the screen: each **row is a note** (one octave shown at a time) and each **column is a step**. Step numbers run across the top.
- Events appear in the **track color** by default; the selected event or events are **white**.
- The **white vertical frame** marks the current playback position.
- The semitransparent bars behind the steps are the **automation overlay** — the parameter-automation graph for this sequence. Show or hide it with **Show Auto / Hide Auto** in the menu (see [Parameter Automation](#)).
- The track and sequence name sit at the lower-left of the toolbar, followed by the **Event**, **Dynamics**, **Seq**, and **Auto** tabs. The tabs choose which set of parameters the knobs control (see Twist, below); the **Auto** tab is covered under [Parameter Automation](#), later in this chapter.
- **Tap a cell** to toggle a note on or off.
- **Touch and drag** to select notes. The parameters on the **Event** and **Dynamics** tabs then apply to all of the selected events.
- **Pinch** to zoom.
- **Drag with two fingers** to scroll the grid.
- **Double-tap along the left edge** of the screen to *fold* the sequence, hiding any rows (notes or pads) that have no events so you see only the ones in use. Double-tap the left edge again to unfold.

Push

- **SEQ** opens the sequencer for the selected sequence.
- **< / >** change the selected sequence within the track.
- **Up / Down** scroll the displayed notes up and down by one octave.
- **REC + PLAY**, then play the instrument, to record live. Recording is additive — it adds your new notes without removing the notes already in the sequence.

Twist

The selected toolbar tab sets what the knobs do.

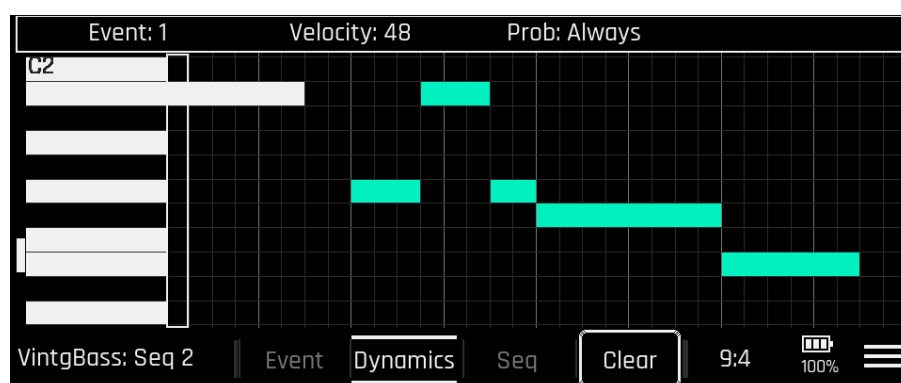
Event tab — select and edit one event:

Parameter	Description and Range
Event	Selects which event to edit. 1 to the number of events in the sequence.

Parameter	Description and Range
Start	The step where the event begins.
Note	The pitch the event plays.
Length	How long the event lasts, in steps.

Dynamics tab (knob 1 still selects the event):

Parameter	Description and Range
Velocity	How hard the note plays. 1 to 127.
Prob	The probability that the event plays each time the sequence reaches it. 1% to <i>Always</i> .



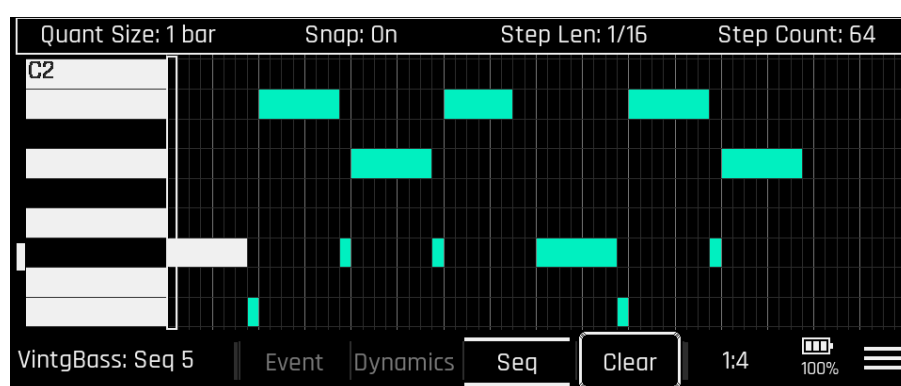
Keys Sequencer, Dynamics tab

Seq tab — settings for the whole sequence:

Parameter	Description and Range
Quant Size	The musical boundary the sequence aligns to when it starts and stops. After you launch it, the sequence waits until the next Quant Size boundary before it begins, and it loops on that boundary. Range: <i>2 bars</i> down to <i>1/64</i> , including triplet (T) sizes.
Snap	Snaps events to the step grid when on; allows free timing when off. Range: On, Off.

Parameter	Description and Range
Step Len	The length of each step in the grid. When Snap is on, recorded notes are quantized to this grid; when Snap is off, notes keep their original timing. Range: <i>8 bars</i> down to <i>1/64</i> , including triplet (T) sizes.
Step Count	The number of steps in the sequence. Range: <i>Open</i> (open-ended), or 1 to 256.

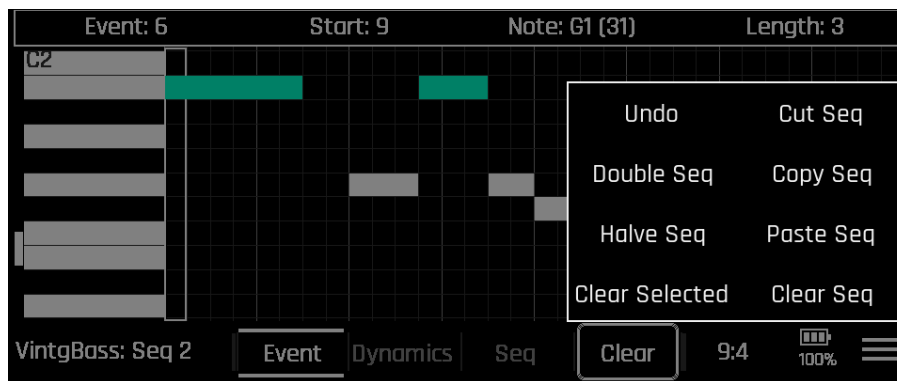
Together, **Step Len** and **Step Count** set how long the sequence plays: its total length is Step Count × Step Len.



Keys Sequencer, Seq tab

Menu

- **Undo** — reverts your most recent change to the sequence.
- **Double Seq** — doubles the number of steps and repeats the current events across the new length (up to 256 steps). Not available for open-length sequences.
- **Halve Seq** — halves the number of steps. Not available for open-length sequences.
- **Clear Selected** — removes the events you have selected.
- **Cut Seq** — copies the whole sequence to the clipboard and clears it.
- **Copy Seq** — copies the whole sequence to the clipboard.
- **Paste Seq** — pastes the copied sequence into the current one.
- **Clear Seq** — removes all events from the sequence.
- **Show Auto / Hide Auto** — shows or hides the parameter automation bars on this tab (see [Parameter Automation](#)).

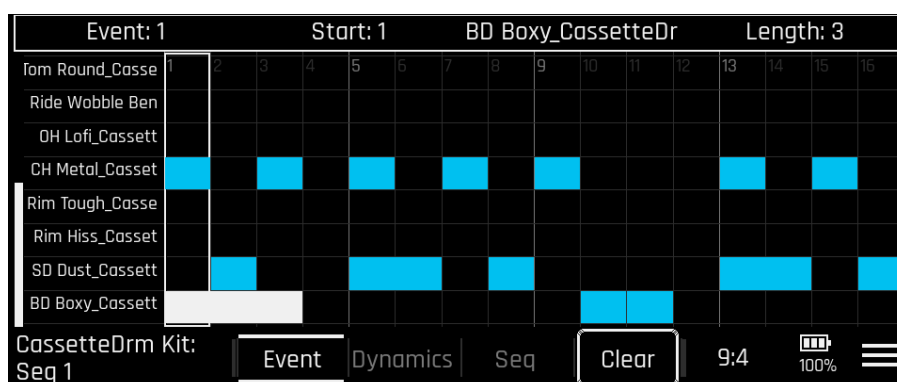


Keys Sequencer menu

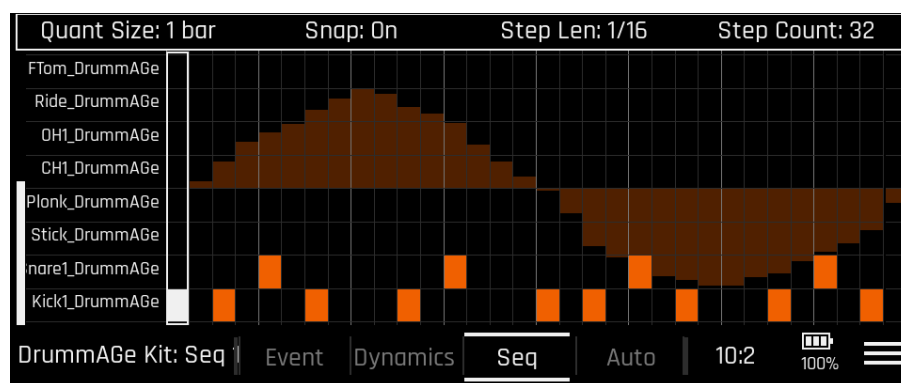
The Pad Sequencer

Used by one-shot tracks. The Pad Sequencer works just like the Keys Sequencer, with these differences:

- Each **row is a pad**, shown by name, instead of a piano note.
- A **muted pad's** row is shown dimmed, so you can tell at a glance which pads are muted (you mute pads on the Pad Bank — see the [One-Shot Track chapter](#)).
- **Up / Down** scroll through the pads instead of changing octave.
- On the **Event** tab, knob 3 is **Pad** (which pad the event triggers) instead of Note.
- You reach it by pressing **SEQ again** from the Step Sequencer; SEQ toggles between the two.



Pad Sequencer, Event tab



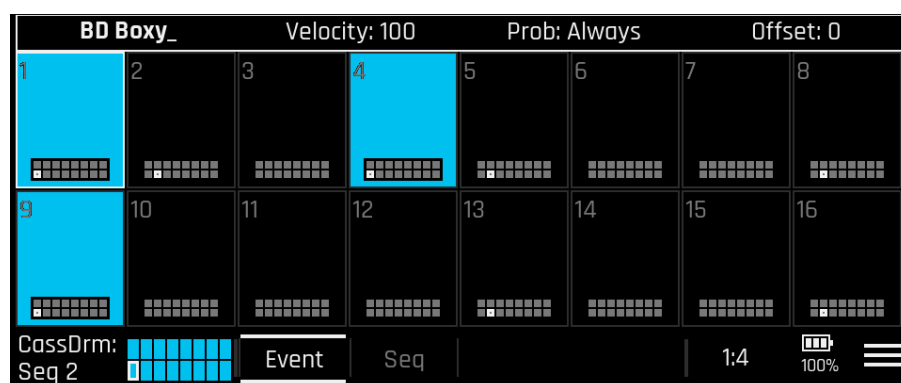
Pad Sequencer, Seq tab

The **Seq** view above shows the **automation overlay** turned on: the bars behind the steps are the sequence's parameter-automation graph, toggled with **Show Auto** / **Hide Auto** (see [Parameter Automation](#)).

The Step Sequencer

Used by one-shot tracks. This is the view you get when you first press **SEQ** on a one-shot track.

See and Touch



Step Sequencer, Event tab

- A **2×8 grid of 16 steps** fills the screen. Each large box is a step; the mini-grid inside it shows which pads trigger on that step.
- A **track-colored background** means the selected pad triggers on that step. The step number is in the top-left of each box, and the **white frame** marks the playback position.
- When the **selected pad is muted**, its step cells are shown in **light gray** instead of the track color (you mute pads on the Pad Bank — see the [One-Shot Track chapter](#)).
- The **pad selector** in the lower-left shows the selected pad. Tap it to open the **pad grid**, where each pad is labeled with its name, or use the **Pad** knob.

- Tap a step to toggle the selected pad on or off for that step.
- Swipe across steps to paint several at once. Steps are selected only while you hold them.

Push

- **SEQ** opens the Step Sequencer; press **SEQ again** to switch to the Pad Sequencer.
- **</>** change the selected sequence within the track.
- **Up / Down** scroll the visible step window by one row (8 steps). The view does not scroll automatically during playback.
- **REC + PLAY**, then press **INST** and play the pads, to record live. You can also record notes received over MIDI.

Twist

Event tab — while you **hold a step**, the knobs show that step's values and let you adjust them for that step. When you are not holding a step, these values become the defaults applied to any new steps you toggle on:

Parameter	Description and Range
Pad	Which pad you are sequencing. Range: the list of pads on the track.
Velocity	How hard the pad plays. 1 to 127.
Prob	The probability that the step plays each time the sequence reaches it. 1% to <i>Always</i> .
Offset	Nudges the step earlier or later than its step time. Range: -47 to +47, or up to half a beat before or after the step time.

Seq tab:

Parameter	Description and Range
Quant Size	The musical boundary the sequence aligns to when it starts and stops after you launch it. Range: <i>2 bars</i> down to <i>1/64</i> , including triplet (T) sizes.

Parameter	Description and Range
Step Len	The length of each step. Range: <i>8 bars</i> down to <i>1/64</i> , including triplet (T) sizes.
Step Count	The number of steps. Range: 1 to 256.

Together, **Step Len** and **Step Count** set how long the sequence plays: its total length is Step Count × Step Len.

Menu

- **Undo** — reverts your most recent change to the sequence.
- **Double Seq** — doubles the number of steps and repeats the current events across the new length (up to 256 steps).
- **Halve Seq** — halves the number of steps.
- **Clear Seq** — removes all events from the sequence.

Parameter Automation

Parameter automation lets a sequence move a parameter on its own as it plays — sweeping a filter, riding a level, nudging pitch — by drawing a curve that runs alongside the sequence steps. It is available on the Keys and Pad sequencers; the Step Sequencer does not show automation.

Automation is organized into **lanes**, labeled **Auto A**, **Auto B**, **Auto C**, and so on. Each lane holds one curve and a list of **targets** — the parameters that lane drives. A single lane can drive several targets at once, so one curve can, for example, open the filter on two pads together. You choose a lane's targets from the Automation Targets pop-up (see below).

The curve itself is shown as a row of **automation bars** behind the sequence steps:

- The bars are drawn in a semitransparent version of the track color.
- The **zero line** runs across the middle of the sequence area. Bars rise above the line for positive values and drop below it for negative values.
- The bars line up with the sequence steps and scroll left and right with them. They do not scroll up and down as you move through the notes or pads.

Showing the Automation Overlay

On the **Event**, **Dynamics**, and **Seq** tabs the automation bars are an overlay you can show or hide, and they are display-only there:

- Open the menu and choose **Show Auto** to display the bars, or **Hide Auto** to turn them off.

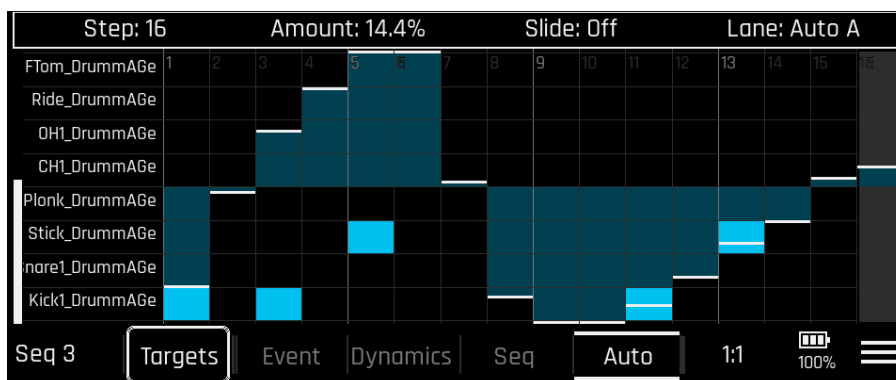
The automation bars are always shown — and are editable — on the **Auto** tab.

The Auto Tab

The **Auto** tab is where you view and edit automation. It sits in the toolbar alongside the Event, Dynamics, and Seq tabs. On this tab the automation bars are always visible and editable, each step's bar capped with a short end mark so you can read its value at a glance.

You work on one lane at a time: pick the lane with the **Lane** knob, select a step with the **Step** knob, and set that step's value with **Amount**. **Slide** is a sequence-wide switch that smooths the automation between steps (see the table below).

See and Touch



Auto tab

- **Drag across the grid** to draw the automation graph by hand — the bar at each step follows your finger as you pass over it.
- What you draw applies to the selected lane; choose the lane with the **Lane** knob.
- Tap the **Targets** button in the lower-left corner to open the **Automation Targets** pop-up, where you choose which parameters the current lane drives (see Automation Targets, below).

Twist

Parameter	Description and Range
Step	Selects which step's automation value you are editing. Turn it fully left to All to adjust every step at once.
Amount	The automation value at the selected step. Range: -100% to +100%, where 0% sits on the center zero line and is the default.
Slide	Smooths the automation between steps. Each step reaches its set value at the start of the step; with Slide on, the value then glides across the step toward the next step's value instead of holding flat and jumping. Slide applies to the whole sequence, not a single step. Range: On, Off.
Lane	Selects which automation lane you are viewing and editing: Auto A, Auto B, Auto C, and so on.

To draw a straight, flat line across the whole sequence, clear the lane's automation, set **Step** to **All**, and then turn **Amount** to the level you want — every step moves together.

You can also open the Automation Targets pop-up from the menu with **Auto Targets**.

Automation Targets

The **Automation Targets** pop-up is where you build the list of parameters a lane drives. Each row pairs a pad with one of its parameters and sets how far the lane's curve moves it. Open it by tapping **Targets** in the lower-left corner of the Auto tab.

The header names the lane you are editing (for example, *Auto C Targets*;) and then lists that lane's current targets in the track color. Parameters for the same pad are separated by commas, and different pads by semicolons; if the list is too long to fit, it ends with *+N*, where *N* is the number of targets not shown.

Three columns fill the pop-up:

- **Target Pad** — the pad whose parameter you want to automate.
- **Target Param** — the parameter on that pad: Level, Pitch, Pan, Attack, Decay, Filter Cutoff, and so on.
- **Amount** — how far, and in which direction, the lane's curve moves that parameter. A positive value moves it with the graph; a negative value

moves it opposite the graph, so you can have some parameters rise while others fall. The cell reads a percentage when the target is active, **[None]** when the parameter is not driven by this lane, or **[No open mod slots]** when it cannot be added because that parameter's modulation slots are already full.

Adding a parameter as a target here is the same as assigning this lane — one of **Auto A** through **Auto D** — as a **modulation source** for that parameter on the track's modulation matrix. It takes one of that parameter's modulation slots, so the Targets pop-up and the modulation matrix show the same routings; when a parameter's slots are all full, it reads **[No open mod slots]** until you free one.

On a pitched track (multisample, slicer, shredder, or external) the pop-up has the same layout, but the track has a single instrument rather than pads: the **Target Pad** column is empty and its label is grayed out, so you choose only a parameter and its amount.



Automation Targets on a pitched track

See and Touch



Automation Targets pop-up

- **Swipe** up and down within the **Target Pad** and **Target Param** columns, or **tap** an entry, to select the pad and the parameter you want to automate.
- The **header** summarizes the lane's targets, listing the first few targeted parameters (ending with +N when more are targeted than fit).

- In the **Target Pad** column, a pad with targets shows a number in parentheses after its name — how many of its parameters this lane targets.
- Targeted pads and parameters appear in the **track color**, so the lane's targets stand out at a glance.

Twist

Parameter	Description and Range
Target Pads	Selects the pad in the Target Pad column (knob 1).
Target Params	Selects the parameter in the Target Param column (knob 2).
Amount	Sets how far, and in which direction, the lane's curve moves the selected parameter; negative values move it opposite the graph. Uses one of the track or pad's modulation slots (knob 4).

Select a pad and a parameter, then turn **Amount** away from **[None]** (positive or negative) to add that parameter as a target for the lane; turn it back to **[None]** to remove it and free its modulation slot.

The Tempo Pop-Up

Tap the **bars:beats** display in the footer to open the Tempo pop-up. You can open it from any screen that shows the bars:beats display. The pop-up dims the screen behind it but keeps it live, so you can hear and see your changes as you make them.

From the pop-up you can:

- Set the **Tempo** (BPM), **Swing**, the metronome level (**MnG**), and the metronome mode (**Met**) with the knobs. Tap a knob label or use the up/down buttons to switch which row the knobs control.
- Tap **Tap Tempo** in time to set the tempo by ear.
- Turn the count-in on or off for sequence and audio recording with the **Seq Count In** and **Audio Count In** buttons.

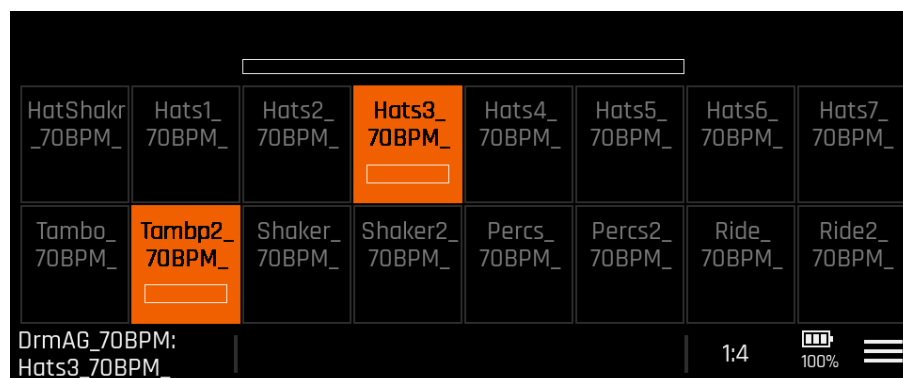
Loop Groups

Overview

A *loop group* is the loop track's version of a sequence. Instead of recording notes, a loop group is a set of loops — chosen from the track's 16-loop bank — that launch and play together. A loop track holds up to eight loop groups, which you select and launch from the Launch screen (see the [Launch Screen chapter](#)).

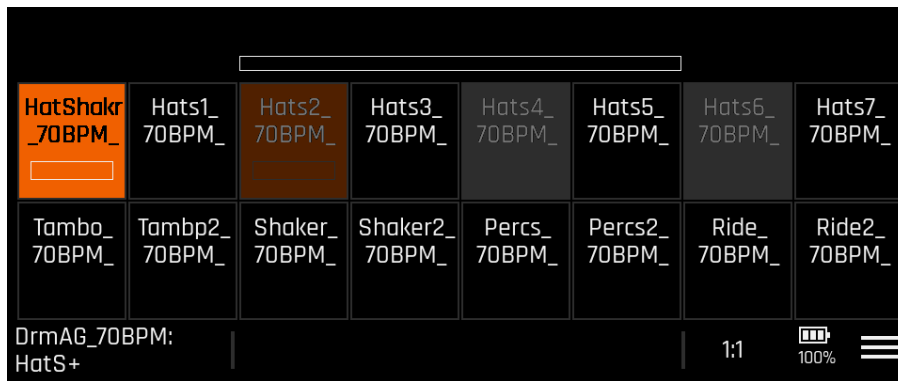
- The **longest active loop** in the group sets the group's overall length.
- By default, the top row of loops seeds launch groups 1 through 8.
- Loop tracks have no note sequences; pressing **SEQ** on a loop track opens the Loop Group editor described here.

See and Touch



Loop Group editor

- The screen shows the track's **loop grid** — the same loops as the Loop Bank.
- Loops that are **active** in the group have a **track-color background**; inactive loops have a black background.
- A **muted loop** is dimmed: in the group it shows a **dimmed track-color** background with light-gray text, and outside the group it shows a **dark-gray** background. A muted loop's progress frame is dark gray rather than white. Mute loops on the Loop Bank (see the [Loop Track chapter](#)).
- Each loop has its own progress bar showing how far through that loop playback has reached.
- A **group progress meter** above the grid shows the playback progress of the group as a whole.
- The track and group name appear at the lower-left.
- **Tap a loop to add it to the group. Tap it again to remove it.**



Loop Group editor with muted loops

Push

- **SEQ** opens the Loop Group editor for the selected loop track, using the loop group you selected on the Launch screen.
- **</>** change the selected loop group within the track.
- Launch and stop loop groups from the **Launch** screen.

Menu

Copy Group, Clear Group, Paste Group.

Song Mode

Overview

Song mode lets you arrange your sequences into a full performance that blackbox 2 plays back on its own. It builds on three layers:

- A **sequence** is a pattern on a single track. You create sequences on the sequencer screens (see the [Sequencing chapter](#)).
- A **scene** captures one sequence for each of the four tracks, so a scene is a snapshot of what every track plays at a given moment in the arrangement. Blackbox 2 holds up to 16 scenes.
- A **song** is the ordered series of those scenes, each with a repeat count. When you turn Song mode on, blackbox 2 plays the scenes in order, repeating each one the set number of times.

Two screens work together here. The **Scene screen** is where you build a scene by choosing which sequence each track plays. The **Song screen** is where you arrange the scenes into a song, set how many times each one repeats, and play the arrangement back.

You can also create scenes by snapping the current launch state from the Launch screen (see the [Launch Screen chapter](#)); the Scene screen is where you fine-tune what a scene contains.

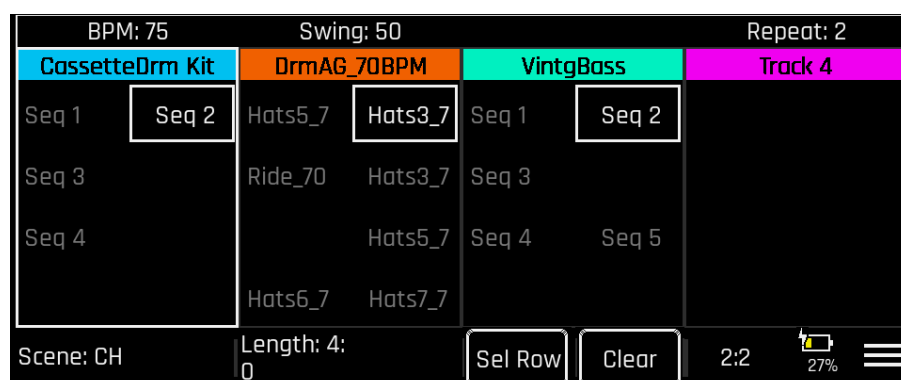
Reach these screens from the button strip:

- **SONG** opens the Song screen.
- **SCENE** opens the Scene screen.

The Scene Screen

The Scene screen is where you build a single scene by assigning one sequence to each track.

See and Touch



Scene screen

- **Knob bar** along the top. Turn a knob to adjust its parameter (see Twist, below).
- **Track columns** fill the main area, one column per track. Each column is headed by the track name and lists that track's sequences. The sequence currently assigned to this scene is highlighted with a white frame.
- **Toolbar** along the bottom shows **Scene:** and the scene name at the left, the scene **Length** in bars and beats, a **Sel Row** button, a **Clear** button, and the menu icon.

To assign a sequence, touch it in its track's column. Touch the assigned sequence again to clear it, leaving that track silent in the scene. The **Length** readout reflects the longest sequence in the scene.

For a Loop track, the column lists the track's loop groups instead of sequences, so the scene selects which loop group that track plays. See the [Loop Groups chapter](#) for more on loop groups.

Sel Row makes it quick to build a scene from a group of sequences. With it on, selecting a sequence in one track also selects the sequences at the same row and column position in the other three tracks, so all four are assigned to the scene at once. This is convenient when you have created sequences to work together as a group and placed them at the same row and column in each track. Turn it off to go back to assigning one track at a time.

Clear removes all sequence assignments from the scene.

The menu (the icon at the far right of the toolbar) holds **Rename Scene**, **Cut Scene**, **Copy Scene**, and **Paste Scene**.

Push

- **SCENE** — opens the Scene screen.
- **Left / Right** — step to the previous or next scene.
- **Up / Down** — move the sequence selection up or down within the selected track's column.

Twist

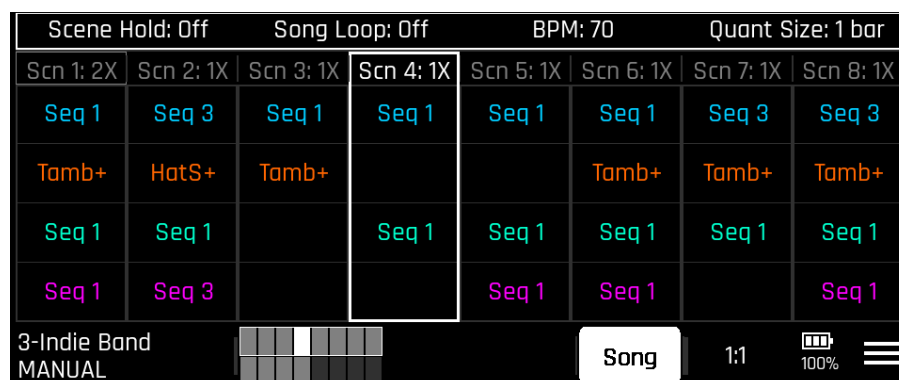
Parameter	Description and Range
BPM	The project tempo, in beats per minute. Range: 40 to 250.

Parameter	Description and Range
Swing	The swing amount applied to playback. Range: 1 to 99, with 50 being straight (no swing).
Repeat	How many times this scene repeats before the song advances to the next scene. Range: 1 to the maximum play count.

The Song Screen

The Song screen is where you arrange your scenes into a song and play the whole arrangement back.

See and Touch



Song screen

- **Knob bar** along the top. Turn a knob to adjust its parameter (see Twist, below).
- **Scene columns** fill the main area, showing up to eight scenes at a time. Each column has a header band at the top showing the scene name and its repeat count (for example, *Intro: 2x*), and shows the sequences the scene plays on each track below it. The selected scene is outlined with a white frame, and the scene that is currently playing shows a progress meter that gradually fills the header's background color from left to right as the scene plays.
- **Scene Grid** — a small grid just to the right of the project name shows which page of scenes you are viewing. A song holds 16 scenes in two rows of eight; **tap the Scene Grid** to switch the screen between the first eight and the second eight. Each block is light gray when its scene has content and dark gray when it is empty; the selected scene's block is white, and a white frame around a row marks the row shown on screen.

- **Toolbar** along the bottom shows the project name and the Scene Grid at the left, a **Song** button, and the menu icon.

Touch anywhere in a scene column to select it. With Song mode off and the transport running, touching a scene also triggers it directly; the scene loops until you trigger a different scene or press **STOP**. The **Left** and **Right** arrow buttons select a scene without triggering it; stepping past the eighth scene in a row moves the selection into the next row and the screen follows it. Tapping the Scene Grid to view the other row does **not** move the selection, so the scene queued to play next stays put.

The **Song** button turns Song mode on and off. When Song mode is on, blackbox 2 plays the scenes in order from the selected scene, repeating each one according to its Repeat count.

The screen has three knob-focus areas: the **knob bar** at the top, the first four scene columns, and the last four scene columns. By default the knobs control the song-wide settings in the knob bar. Use the up and down arrow buttons to move focus to the scene headers instead, so the knobs set the repeat counts — four scenes at a time, since there are four knobs. A white frame shows which area has focus.

Exporting a Song

The menu's **Export Song** command records the full song to an audio file on the microSD card.

1. Press **SONG** to open the Song screen.
2. Touch the menu icon, then **Export Song**.
3. If Song mode is off or Scene Hold or Song Loop is on, blackbox 2 asks to confirm that it will turn Song mode on and turn Scene Hold and Song Loop off for the export. Touch **OK** to continue.
4. Edit the export name and touch **Enter**.

Blackbox 2 plays the song through once while it records, showing a progress popup. Touch **Cancel** to stop the export early.

The exported WAV is saved in the project's own folder on the microSD card, at Projects\<project name>, alongside the project's other files. The default name is *Song <project name>.wav*; if a file by that name already exists, blackbox 2 adds a number to keep it unique.

Exporting Stems

The menu's **Export Stems** command records the song as separate **stems** — one WAV for each track the song plays, plus the full song mix — with a single command that makes several recording passes.

1. Press **SONG** to open the Song screen.

2. Touch the menu icon, then **Export Stems**.
3. If Song mode is off, or Scene Hold or Song Loop is on, blackbox 2 first asks to confirm that it will turn Song mode on and turn Scene Hold and Song Loop off. Touch **OK** to continue.
4. Blackbox 2 then asks to confirm the export, telling you how many stems it will make and how many times the song will play — for example, *Export 4 stems and the song? The song will play 5 times*. Touch **OK** to start.

Blackbox 2 plays the song once for each stem and once more for the full mix, recording each pass with the outputs muted, and shows a progress popup. Touch **Cancel** to stop early. Because it plays the song once per stem, a stem export takes several times as long as exporting the song alone.

Only the tracks the song actually plays get a stem: a track must be given a sequence by a scene the song plays, and it must not be muted. This way the stems add back up to the full song.

The stems are saved in a new folder named *Stems <project name> NNN* inside the project's folder on the microSD card (the number keeps each export separate). Each track's file is named *<track name> - Track N.wav*, and the full song mix is saved in the same folder under its usual *Song <project name>.wav* name.

Note:

- The export plays in real time, so it takes about $(\text{number of tracks} + 1) \times (\text{song length} + (8 \text{ seconds} \times (\text{number of tracks} - 1)))$.
- Tracks that are muted or left out by a solo are skipped, so the stems add up to the song.
- Tracks sent to Output 2 or Output 3 export as silence.
- Stems include the master compressor, so they add up to nearly, but not exactly, the full mix.
- Don't push PLAY during the pauses between passes, or the audio ends up in the next stem.
- Tap Cancel or push STOP during an export to stop it. Blackbox 2 deletes the unfinished folder.
- Blackbox 2 restores your mute and solo settings when the export ends.

Push

- **SONG** — opens the Song screen.
- **Left / Right** — select the previous or next scene without triggering it; stepping past the eighth scene in a row moves into the next row of scenes.
- **Up / Down** — cycle the knob focus between the knob bar, the first four scene headers, and the last four scene headers.

Twist

When the knob bar has focus, the knobs control the song-wide settings:

Parameter	Description and Range
Scene Hold	When on, the current scene keeps repeating instead of advancing to the next scene in the song. Range: On, Off.
Song Loop	When on, the song loops back to the first scene after the last one finishes. Range: On, Off.
BPM	The project tempo, in beats per minute. Range: 40 to 250.
Quant Size	The musical boundary on which a triggered scene change takes effect. Range: 2 bars down to 1/64, including triplets.

When a group of scene headers has focus, each knob sets the **Repeat** count for one of the four scenes in that group — how many times that scene plays before the song advances.

The Mixer

Overview

The Mixer is where you balance your four tracks and the output buses. It has two regions:

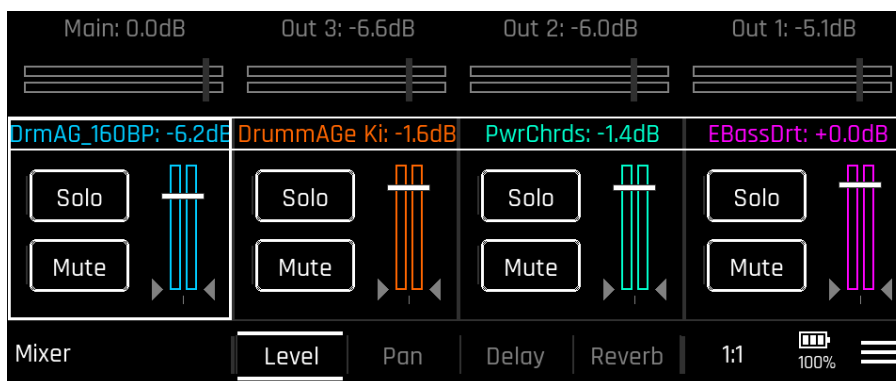
- The **Output Meter Bridge** along the top shows the output buses — the main mix and the three outputs — each with a level meter.
- The **Tracks Meter Bridge** below it shows one **track strip** for each of the four tracks, with that track's level, pan, effect sends, mute, and solo.

Track levels also appear on the Tracks screen, and the per-track Delay and Reverb amounts here are the sends into the shared delay and reverb effects described in the [FX Screens chapter](#).

Press **MIXER** to open the Mixer; **MIXER** always returns to the Mixer. The master compressor and its sidechain open from the Mixer's menu (see The Compressor, below).

The Mixer Screen

See and Touch



The Mixer

The screen is divided into the two meter bridges, plus the toolbar along the bottom.

The Output Meter Bridge

The top bridge holds four horizontal meters for the output buses, from left to right: **Main**, **Out 3**, **Out 2**, and **Out 1**. Each meter shows the live output level, with a bar across it marking the bus's level setting. When this bridge is the focused bridge, the knobs set the four bus levels.

The Tracks Meter Bridge

The lower bridge holds a **track strip** for each track. Each strip shows, around its VU meter:

- The **track name**, with the track's **Level** value as a number to the right of the name.
- **Level** — a bar across the meter.
- **Pan** — a line below the meter.
- **Delay send** — a triangle to the left of the meter.
- **Reverb send** — a triangle to the right of the meter.
- **Mute** and **Solo** buttons.

The indicator for the parameter you are currently controlling turns **white**, so you can always tell which one the knobs are adjusting. Which parameter that is depends on the toolbar tab (see Choosing the Parameter, below).

- **Touch** a track strip to select it. The selected strip is outlined with a **white frame**, the standard selection indicator on blackbox 2, and it becomes the current track on the other screens.
- **Double-tap** a track strip to open that track's INST dashboard.
- Tap **Mute** to silence a track. Muted tracks dim.
- Tap **Solo** to hear a track on its own. Solo overrides Mute, and while any track is soloed the other tracks dim.

The Focused Bridge

The knobs control one bridge at a time. Tap a bridge to make it the focused bridge, or press the **Up** and **Down** arrows to switch between them. The Mixer opens with the Tracks Meter Bridge focused.

A white frame around the corresponding knob bar shows which bridge has the focus. The VU meter outlines further reinforce which bridge is the focused one:

- Outlines are **light gray** on the bridge that is not focused.
- On the focused **Output Meter Bridge**, the outlines are **white**.
- On the focused **Tracks Meter Bridge**, each strip's outline is its **track color**.

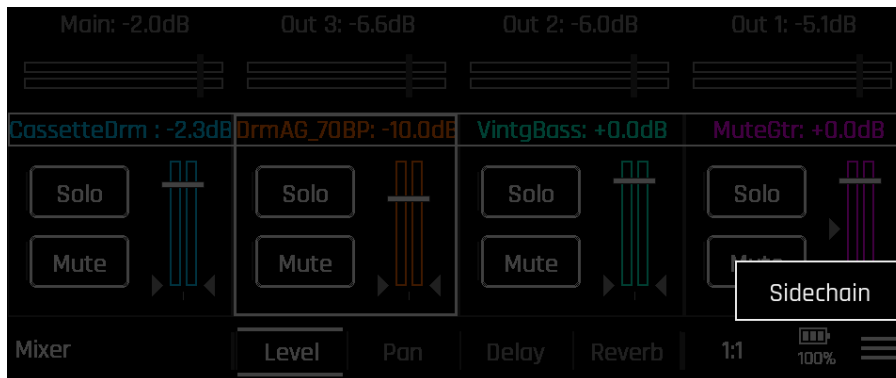
Choosing the Parameter

The toolbar has four tabs that choose which track-strip parameter the knobs adjust:

- **Level, Pan, Delay, and Reverb.**

Pan, **Delay**, and **Reverb** apply to the track strips, so they are available only when the Tracks Meter Bridge is focused. **Level** is always available; when the Output Meter Bridge is focused, the knobs set the bus levels.

The menu (the icon at the far right of the toolbar) holds the **Sidechain** command, which opens the master Compressor screen (see The Compressor, below).



The Mixer menu

Push

- **MIXER** — opens the Mixer.
- **Up / Down** — change the focused bridge between the Output Meter Bridge and the Tracks Meter Bridge.

Twist

When the **Output Meter Bridge** is focused, the knobs set the output bus levels:

Parameter	Description and Range
Main	Master level of the main mix, which feeds the Out 1 jack and the headphone output. Out 2 and Out 3 are independent of Main. Range: -60 dB to +6 dB.
Out 3	Level of output 3, carrying the tracks routed to it. Range: -60 dB to +6 dB.
Out 2	Level of output 2, carrying the tracks routed to it. Range: -60 dB to +6 dB.
Out 1	Level of output 1, applied on top of Main. Range: -60 dB to +6 dB.

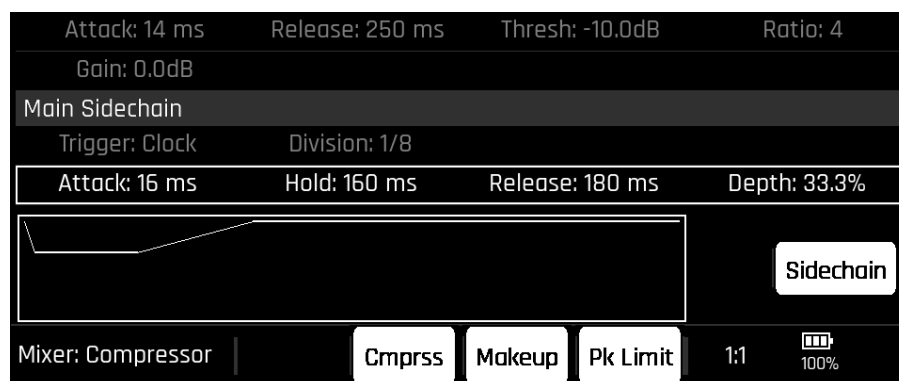
When the **Tracks Meter Bridge** is focused, each knob adjusts one track strip, and the toolbar tab chooses which parameter:

Parameter	Description and Range
Level	Output level of the track. Range: -60 dB to +6 dB.
Pan	Stereo position of the track. Range: full left to full right.
Delay	The track's send level into the delay effect. Range: 0 to 100%.
Reverb	The track's send level into the reverb effect. Range: 0 to 100%.

The Compressor

Blackbox 2 has a master compressor on the main output, with its own **Main Sidechain** ducker. Reach this screen from the Mixer's menu: tap the menu icon and choose **Sidechain**.

See and Touch



The Compressor

- **Knob bar** along the top carries the compressor's two rows of parameters (see Twist, below).
- Three toolbar buttons toggle compressor options. Each is on when it shows white with black text and off when it shows a gray frame:
 - **Cmprss** — turns the master compressor on or off.
 - **Makeup** — turns on automatic make-up gain, which raises the output to compensate for the level the compressor removes.

- **Pk Limit** — adds a brickwall peak limiter that catches transients above the threshold.
- Below the compressor controls, the **Main Sidechain** section adds its own two rows, an envelope graph, and a **Sidechain** on/off button (see Main Sidechain, below).
- Tap a row, or press **Up / Down**, to move the knobs through all four rows — the two compressor rows, then the two sidechain rows.

Main Sidechain

The **Main Sidechain** ducks the main mix — the signal routed to **Out 1** and the headphone output — when a trigger fires, the same ducker a track has but applied to the main output. Because it ducks everything in that mix, it is most useful when the trigger signal is sent to a **different output** (Out 2 or Out 3, which are independent of the main mix), so the sound driving the duck is not ducked along with the rest of the mix. Its header text turns white when a sidechain row is selected, and you can tap the envelope graph to jump straight to the envelope row.

It uses the same controls as a track's sidechain: a **Trigger** (Track, Pad, Clock, Audio, or MIDI) with two trigger-dependent knobs, then **Attack**, **Hold**, **Release**, and **Depth**. See the **Sidechain** section of the [Track Configuration chapter](#) for the full per-trigger knob details. Tap the **Sidechain** button to turn the ducker on or off.

Push

- **MIXER** — returns to the Mixer.
- **Up / Down** — step the knobs through the compressor and sidechain rows.

Twist

Row 1:

Parameter	Description and Range
Attack	How quickly the compressor responds once the signal passes the threshold. Range: 0 to 25 ms.
Release	How quickly the compressor stops working once the signal falls back below the threshold. Range: 0 to 1000 ms.

Parameter	Description and Range
Thresh	The level above which the compressor starts to act. Range: -48 to 0 dB.
Ratio	How much the compressor reduces the signal above the threshold. Range: 1:1 to 100:1.

Row 2:

Parameter	Description and Range
Gain	The output (make-up) gain applied after compression. Range: -36 to +36 dB.

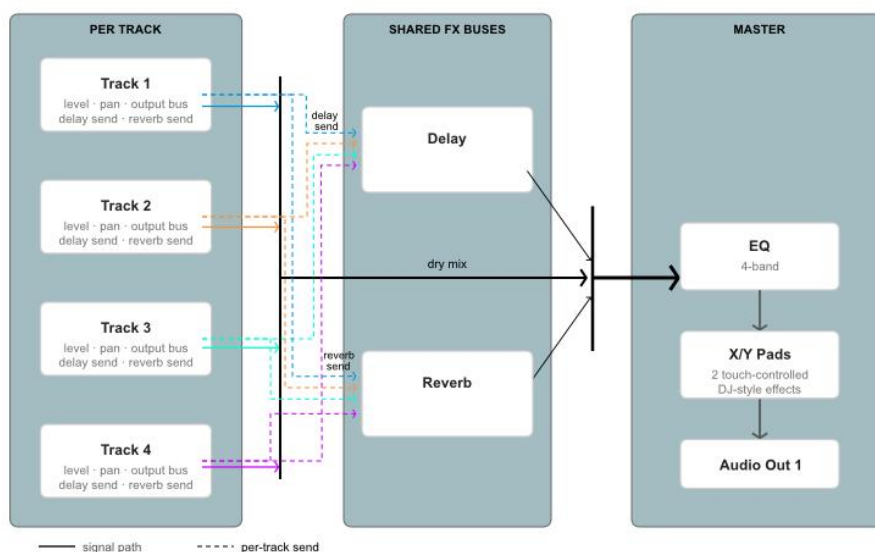
The FX Screens

Overview

Blackbox 2 has a built-in master FX section that processes the combined output of all four tracks before it reaches the audio outputs. The master FX section has four parts:

- **Delay** — a stereo delay including Beat Sync, Filter, and Ping Pong options.
- **Reverb** — a master reverb that adds space and depth to the whole mix.
- **EQ** — a four-band parametric equalizer with a master bypass.
- **X/Y pads** — a pair of touch-controlled DJ-style effect pads. Each pad runs its own effect algorithm and lets you sweep two parameters at once by dragging a finger across the pad.

Each track has its own send levels into the delay and reverb buses, so you can dial in how much of each track gets processed. The delay and reverb settings themselves — time, feedback, character, and so on — are shared across all tracks; adjusting them affects every track that is sending to that bus. The X/Y pads and the EQ sit on the main output, so they affect everything you hear.



blackbox 2 FX signal flow

You can reach the FX screens at any time by pressing the **FX** button on the button strip.

The FX Toolbar

Every FX screen shares the same toolbar along the bottom of the display. The toolbar has four tabs:

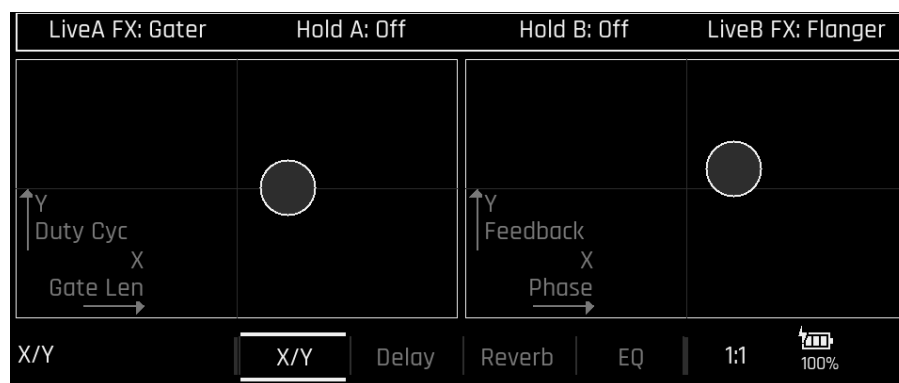
- **X/Y**
- **Delay**
- **Reverb**
- **EQ**

Touch a tab to switch to that view. The active tab is highlighted so you can always tell which view you are looking at.

The X/Y Pad Screen

The X/Y Pad screen gives you two large touch-controlled pads, side by side, that you can use to control FX settings in real time. The left pad is **Live A** and the right pad is **Live B**.

See and Touch



X/Y Pad screen

- **Knob bar** along the top. Turn a knob to adjust its parameter (see Twist, below). The labels on each pad update to show which two parameters the X and Y axes are controlling for the selected algorithm.
- **Left pad (Live A)** and **right pad (Live B)** fill the main area. Lines through the center of each pad divide it into quadrants for reference. Each axis runs from the selected parameter's lowest value at the lower-left to its highest at the upper-right — left to right for the X parameter, bottom to top for the Y parameter. For a continuous parameter (0–100%) the center is the halfway value; for a parameter with discrete values the axis is split into equal bands, one per value, in order. A small white circle shows the current X/Y position; when you touch the pad it expands into a larger circle with a gray fill. With a discrete-value parameter the circle jumps from band to band rather than moving smoothly.
- **Toolbar** along the bottom with the FX tabs.

Controlling DJ Style Effects with an X/Y Pad

1. Press **FX** and touch the **X/Y** tab on the toolbar.

2. Turn knob 1 to choose the algorithm for the left pad, or knob 4 for the right pad.
3. Touch and drag inside a pad. The white circle follows your finger and the X and Y parameters move together.
4. Lift your finger. With Hold off, the effect disengages and the circle returns to its resting position; with Hold on, the pad keeps the last position you touched (see below).

Hold A and Hold B

By default, when you lift your finger the effect disengages and the circle returns to its resting position, in the middle of the pad for most algorithms. The circle resting there does not mean the parameter is set to that middle value — the effect is simply not engaged until you touch the pad again. When you turn **Hold A** on, the left pad stays at the last position you touched, keeping the effect engaged there until you touch it again. **Hold B** does the same for the right pad. Use Hold when you want to dial in a setting and leave it there — for example, a fixed filter position or a constant amount of bitcrushing. Turn the Hold knob to toggle Hold on and off.

Available Algorithms

The algorithms available on the **Live A** pad are:

- **Repeater** — chops the audio into repeating slices. X: repeater length (1/4, 1/8, 1/16, 1/32). Y: wet/dry mix (0–100%).
- **Gater** — rhythmically opens and closes the gate on the audio. X: gate length (1/4, 1/8, 1/16, 1/32). Y: duty cycle (0–100%).
- **Filter** — a sweepable resonant filter. X: cutoff frequency (0–100%). Y: resonance (0–100%).

The algorithms available on the **Live B** pad are:

- **Bitcrusher** — reduces the bit depth and sample rate for lo-fi textures. X: bit depth (0–100%). Y: rate reduction (0–100%).
- **Filter** — a sweepable resonant filter. X: cutoff frequency (0–100%). Y: resonance (0–100%).
- **Echo** — a beat-synced delay echo. X: delay time (1/2, 1/2T, 1/4, 1/4T, 1/8, 1/8T, 1/16, 1/16T, 1/32, 1/32T, 1/64). Y: feedback (0–100%).
- **Echo HPF** — the same echo with a high-pass filter on the return. X: delay time (1/2, 1/2T, 1/4, 1/4T, 1/8, 1/8T, 1/16, 1/16T, 1/32, 1/32T, 1/64). Y: HPF cutoff (0–100%).
- **Flanger** — a swept flanger. X: phase (0–100%). Y: feedback (0–100%).

- **Echo 2** — a second echo variant without triplet values. X: delay time (1/2, 1/4, 1/8, 1/16, 1/32, 1/64). Y: feedback (0–100%).

Push

- **FX** — opens the FX screens. Press again to cycle through the tabs.

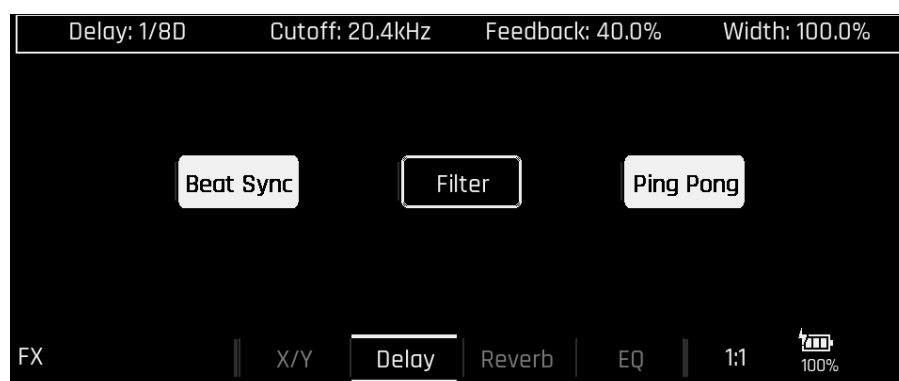
Twist

Parameter	Description and Range
LiveA FX	The effect algorithm for the left pad. Options: Repeater, Gater, Filter.
Hold A	Whether the left pad holds its position when you lift your finger. Options: On, Off.
Hold B	Whether the right pad holds its position when you lift your finger. Options: On, Off.
LiveB FX	The effect algorithm for the right pad. Options: Bitcrusher, Filter, Echo, Echo HPF, Flanger, Echo 2.

The Delay Screen

The Delay screen controls the master stereo delay.

See and Touch



Delay screen

- **Knob bar** along the top. Turn a knob to adjust its parameter (see Twist, below).

- **Mode buttons** in the main area: **Beat Sync**, **Filter**, and **Ping Pong**. Each button is lit when its mode is active. Touch a button to toggle it.
- **Toolbar** along the bottom with the FX tabs.

Push

- **FX** — opens the FX screens. Press again to cycle through the tabs.

Twist

Parameter	Description and Range
Delay	The delay time. When Beat Sync is on, steps through tempo-locked note values; when off, sets a free-running time in milliseconds.
Cutoff	The cutoff frequency of the delay's internal filter. Only active when Filter mode is on.
Feedback	How much of the delayed signal feeds back into the input, controlling the number of repeats.
Width	The bandwidth of the delay's internal filter. Only active when Filter mode is on.

The Reverb Screen

The Reverb screen controls the master reverb.

See and Touch



Reverb screen

- **Knob bar** along the top. Turn a knob to adjust its parameter (see Twist, below).
- **Freeze button** in the main area. Touch **Freeze** to hold the current reverb tail indefinitely, suspending the decay so the tail sustains without fading. Touch **Freeze** again to release it and let the tail decay normally.
- **Toolbar** along the bottom with the FX tabs.

Push

- **FX** — opens the FX screens. Press again to cycle through the tabs.

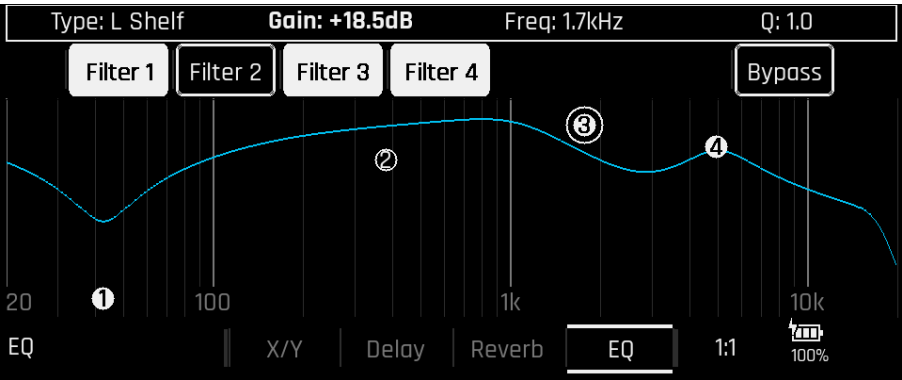
Twist

Parameter	Description and Range
Decay Time	How long the reverb tail lasts before it fades away.
Pre Delay	How long the reverb waits before the first reflection begins, in milliseconds.
Damping	How quickly the high frequencies in the reverb tail decay. Higher damping gives a darker, warmer tail; lower damping gives a brighter, more open tail.

The EQ Screen

The EQ screen controls a four-band parametric equalizer on the main output.

See and Touch



EQ screen

- **Knob bar** along the top. The four knobs control the currently selected band (see Twist, below).

- **EQ graph** in the main area, showing the response curve across a frequency display. Each band has a numbered handle (1 through 4) positioned at its current frequency and gain. A white-filled circle indicates an enabled band; a black-filled circle indicates a disabled band. The selected band has an additional outer circle around it.
- **Band and Bypass buttons** below the graph: **Filter 1** through **Filter 4** toggle each band on or off; **Bypass** bypasses the entire EQ. A button is lit when active. When the EQ is bypassed, the response curve is drawn gray.
- **Toolbar** along the bottom with the FX tabs.

Selecting a Band

- Touch a numbered handle on the EQ graph to select that band.
- Press the **Left** or **Right** arrow button to step through the bands. The selection wraps at the ends.

The knob bar updates to show the selected band's values.

Editing on the Graph

- Drag a band handle **up or down** to change its gain.
- Drag a band handle **left or right** to change its frequency.

The knob bar updates as you drag.

Push

- **FX** — opens the FX screens. Press again to cycle through the tabs.
- **Left / Right** — step the band selection through bands 1 to 4.

Twist

The knobs control whichever band is currently selected.

Parameter	Description and Range
Type	The filter type for this band. Options: None, L Cut, L Shelf, Param, H Shelf, H Cut. Choose None to disable the band.
Gain	The gain in dB for shelf and bell bands. Has no effect on cut bands.
Freq	The corner or center frequency of the band, in Hz.
Q	The resonance or width of the band. Higher Q gives a narrower shape.

MIDI

Overview

Blackbox 2 works with MIDI in four ways: you can play its tracks from an external controller, sequence and play external gear from blackbox 2, control track and instrument parameters with MIDI CC, and use incoming MIDI notes to trigger scenes and sequences and to record. Each track has its own MIDI input and output channels, so a single controller or sequencer can address the four tracks independently, and a separate project-wide MIDI input triggers scenes and sequences across all tracks.

Blackbox 2 does not support MPE.

The MIDI settings are spread across a few screens:

- **Track Configuration** — each track's MIDI input and output channel.
- **Project Settings** — the project-wide MIDI input (**ProjMidiInPrt** and **ProjMidiInCh**) used for MIDI triggering.
- **Global Settings** — the MIDI output type (Type A or Type B) and the pitch-bend range.

MIDI Connections

Blackbox 2 receives MIDI over the TRS and USB connections, and sends MIDI over its TRS MIDI Out jack. The connections are described in the [Hardware Tour chapter](#):

- **TRS MIDI In** — a 3.5 mm TRS jack. Blackbox 2 auto-detects whether the cable is TRS Type A or Type B, so no setting is needed for input.
- **TRS MIDI Out** — a 3.5 mm TRS jack. Set the output type to **Type A** or **Type B** on the Global Settings screen to match your gear.
- **USB** — the **MIDI HOST** port connects USB MIDI controllers and keyboards, and the **PWR/DATA** port carries USB MIDI from a computer.

Blackbox 2 listens for MIDI on the TRS and USB inputs at the same time.

MIDI adapter cables to connect the 3.5 mm TRS jacks to standard 5-pin DIN gear are described in the [Hardware Tour chapter](#).

Playing Tracks from a MIDI Controller

Setting a Track's MIDI Input

Each track listens on its own MIDI input channel, set on the Track Configuration screen:

- **MIDI In Chan** — None, or 1 through 16. **None** disables MIDI input for the track.

By default, projects map the four tracks to channels 1 through 4, from left to right — track 1 on channel 1, track 2 on channel 2, and so on.

To access the Track Configuration screen, push **TRACKS**, select the desired track, tap the **menu** icon, then select **Config Track**.

Playing Each Track Type over MIDI

How a track responds to your playing depends on its type:

- **Multisample** and **External** tracks play like a keyboard instrument. Press keys to play pitched notes across the track's range, just as you would any synth. (Middle C on the keyboard sits at note 36, C2.)
- **One-Shot** and **Loop** tracks play like a drum kit: each of the sixteen pads has its own note, so a pad controller — or a little over an octave of keys, starting at C2 — triggers the pads one per note.
- **Slicer** and **Shredder** tracks let you play the slices from the keyboard. The lowest note (C2) plays the first slice, and each higher note plays the next slice up, so you can play the slices in real time or sequence them.

Play harder for a louder note — the tracks respond to velocity.

Pitch Bend

The **pitch-bend range** is set on the Global Settings screen (**MIDIbndRng**), from 1 to 12 semitones.

Sending MIDI to External Gear

Each track can also send MIDI out, set by its **MIDI Out Chan** (None, or 1 through 16) on the Track Configuration screen.

Playing a track's on-screen keyboard or pads, and playing its sequences, sends notes out on that track's MIDI channel. This is how an **External** track drives an outboard instrument — see the [External Track chapter](#) — and how a track can double as a MIDI sequencer for external gear. Set the output type (Type A or Type B) on the Global Settings screen to match your gear.

Loop tracks do not send MIDI out.

Controlling Parameters with MIDI CC

Incoming MIDI Control Change (CC) messages adjust track and instrument parameters. The mapping is fixed — it is not MIDI-learn — and the full set of destinations depends on the track type.

A handful of **track-level CCs are the same across every track type**:

CC	Controls
6	Track mute
7	Track level
10	Track pan
38	Track solo
90	Track reverb send
91	Track delay send

The remaining CCs address instrument parameters — filter cutoff, resonance, envelope, per-pad level and pitch, grain controls, and so on — and differ for one-shot, loop, slicer, shredder, and multisample tracks. The complete per-instrument CC map is published as an online chart, the [blackbox 2 MIDI CC Mapping](#) spreadsheet; an Excel version is also available from the Downloads page at 1010music.com/downloads. Both are listed in the Appendices under Resources.

MIDI Triggering and Recording

Beyond playing notes, blackbox 2 maps certain MIDI notes to **actions** — selecting scenes, launching sequences, and recording into pads. What a note does depends on the **channel it arrives on**:

- Notes on the **project MIDI input** (set by **ProjMidiInPrt** and **ProjMidiInCh** on the Project Settings screen) trigger project-wide actions: selecting scenes and launching each track's sequences.
- Notes on a **track's MIDI In channel** trigger that track's pad recording actions, on **one-shot and loop tracks** only, and only while that track's **Pad Rec** option is on (see the [Track Configuration chapter](#)). Pitched track types (multisample, slicer, shredder, external) ignore these action notes and just play them.

Set the project channel to one no track uses. If **ProjMidiInCh** matches a track's **MIDI In Chan**, that track handles the notes and the project triggers never fire. Tracks default to channels 1–4, so pick a free channel — 16, for example — for the project input.

On the Project MIDI Input

Notes	Action
2–33	Select a scene (note 2 selects the first scene, note 3 the second, and so on).
34	Select the previous scene.
35	Select the next scene.
64 and up	Launch a track's sequence — eight notes per track: track 1 = 64–71, track 2 = 72–79, track 3 = 80–87, track 4 = 88–95.

On a Track's MIDI Input

These apply to **one-shot and loop tracks** while **Pad Rec** is on, using notes received on that track's own **MIDI In Chan**:

Notes	Action
36–51	Play pads 1 through 16 (this works whether or not Pad Rec is on).
68–83	Record into pad 1 through 16.
84–99	Clear pad 1 through 16.
100	Select the previous pad.
101	Select the next pad.
102	Play the selected pad.
103	Record into the selected pad.
104	Clear the selected pad.

With **Pad Rec** off, the recording and pad-action notes (68 and up) are ignored, so you can play the pads without triggering a recording by mistake.

MIDI Implementation Chart

Function	Transmitted	Recognized	Remarks
Basic Channel	1–16	1–16	Set per track.
Mode	—	Poly	Listens on the configured channel; no Omni mode. MPE is not supported.
Note Number	Yes	Yes	See MIDI Triggering and Recording, above.
Velocity	Note On: Yes	Note On: Yes	Sets note level.
Pitch Bend	No	Yes	Range 1–12 semitones (Global Settings).
Control Change	No	Yes	Per-instrument CC map; see the CC chart.
Program Change	No	No	
Aftertouch	No	Yes	Used as a modulation source.
System Real Time (Clock, Start, Stop, Continue)	Yes	Yes	Received over TRS MIDI and USB; transport start/stop is transmitted over TRS. Clock and transport sync are covered in the Clock & Sync chapter .
System Exclusive	No	No	

For clock and transport synchronization, see the [Clock & Sync chapter](#).

Clock & Sync

Overview

Everything blackbox 2 plays — sequences, loops, the delay, the swing — runs on a tempo clock. Blackbox 2 can be the master, running on its own internal tempo, or it can slave to an external clock so it stays locked to the rest of your rig.

It follows two kinds of external clock:

- **MIDI clock**, over TRS MIDI or USB, to sync with a DAW, a drum machine, or another sequencer.
- The **analog clock** on the TRS clock jack, to sync with modular and analog gear.

You do not pick a sync source by hand. When an external clock is present, blackbox 2 locks to it automatically, and when that clock stops, it falls back to its internal tempo (see [How the Clock Source Is Chosen](#), below).

Setting the Tempo (Internal Clock)

When blackbox 2 is running on its own clock, its tempo is the project **BPM** (40 to 250). You can set it in a few places:

- On the **Project Settings** screen (see the [Project Settings chapter](#)).
- On the **Launch** screen's knob bar (see the [Launch Screen chapter](#)).
- From the **Tempo pop-up** (see the [Sequencing chapter](#)).

The tempo is saved with the project. While blackbox 2 is locked to an external clock, that clock sets the tempo instead.

Syncing over MIDI Clock

Blackbox 2 receives MIDI clock over TRS MIDI and USB, and sends MIDI clock over its TRS MIDI Out jack, at the standard 24 pulses per quarter note.

Following an external MIDI clock. When blackbox 2 receives MIDI clock, it locks its tempo to the incoming clock. A MIDI **Start** message begins playback and slaves blackbox 2 to that clock; a MIDI **Stop** message stops playback and returns it to its internal tempo. Set your DAW or device to send MIDI clock and connect it to blackbox 2's TRS MIDI In or USB.

Clocking other gear from blackbox 2. While blackbox 2 is playing, it continuously sends MIDI clock and transport (Start and Stop) messages on its MIDI outputs, so a DAW or a drum machine can follow blackbox 2 as the master. Connect blackbox 2's TRS MIDI Out to the device you want to drive.

The MIDI ports and how to connect them are covered in the [MIDI](#) and [Hardware Tour](#) chapters.

The Analog Clock

The TRS clock jack carries an analog pulse clock for syncing with modular systems, analog sequencers, and drum machines. It is a single jack that works as either an input or an output, set on the Global Settings screen:

- **Clock Dir** — **None**, **In**, or **Out**. **None** leaves the jack inactive, **In** locks blackbox 2 to an incoming pulse clock, and **Out** drives external gear from blackbox 2's tempo.
- **Clock In** — the resolution blackbox 2 expects on an incoming clock: 1, 2, 4, 8, 12, or 24 pulses per quarter note (PPQ).
- **Clock Out** — the resolution of the pulses blackbox 2 sends when the direction is Out: 1, 2, 4, 8, 12, or 24 PPQ.

Match the PPQ to your other gear — many modular clocks use a single pulse per step or per quarter note. The jack itself is described in the [Hardware Tour chapter](#), and these settings are listed in the [Global Settings chapter](#).

How the Clock Source Is Chosen

Blackbox 2 chooses its clock automatically:

- With no external clock present, it runs on its **internal tempo**.
- When it starts receiving an **external clock** — MIDI clock or analog pulses — it locks to that clock and takes its tempo from it. Starting playback from an incoming MIDI **Start** message locks blackbox 2 to that MIDI clock.
- If the external clock stops, blackbox 2 **falls back to its internal tempo** so playback keeps going.

Because the switch is automatic, you can leave a clock connected and blackbox 2 will follow it whenever it is running, and play on its own tempo the rest of the time.

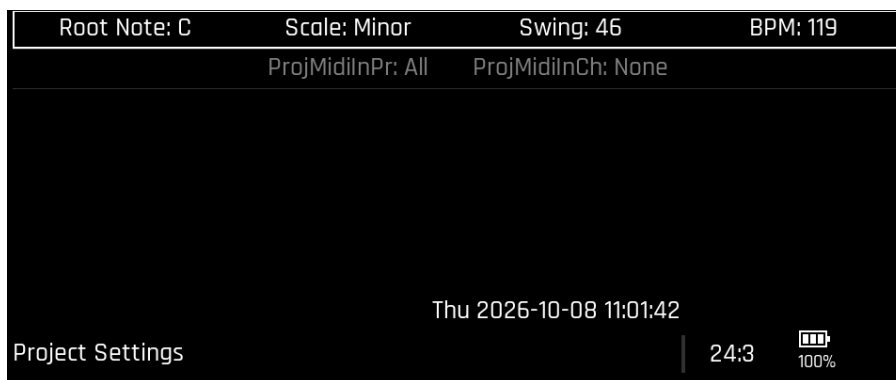
Project Settings

Overview

The Project Settings screen holds the musical and MIDI settings that belong to the loaded project: its key and scale, its tempo and swing, and the project-wide MIDI input. These settings are saved with the project, so each project carries its own. (Device-wide preferences live on the Global Settings screen instead.)

Reach Project Settings by pressing **PROJ** twice: the first press opens the Project Browser, the second opens Project Settings, and a third continues to Global Settings.

See and Touch



Project Settings

- The screen shows two rows of knob labels and their current values: a **Config** row and a **MIDI** row.
- Tap the knob bar, or press the up/down buttons, to choose which row the knobs control. The active row is highlighted with a white frame.
- The toolbar shows **Project Settings** at the lower-left.

Push

- **PROJ** — opens Project Settings; press it again to continue to Global Settings.
- **Up / Down** — switch the knobs between the **Config** and **MIDI** rows.
- Press another mode button to leave the screen.

Twist

Config row:

Parameter	Description and Range
Root Note	The root note of the project's key. Range: A, A#, B, C, C#, D, D#, E, F, F#, G, G#.
Scale	The project's scale. Range: Chromatic, Major, Major Pent, Minor, and other scales.
Swing	The amount of swing applied to the project's timing. Range: 1 to 99, where 50 is straight (no swing).
BPM	The project tempo, in beats per minute. Range: 40 to 250.

MIDI row:

Parameter	Description and Range
ProjMidiInPrt	The MIDI input the project listens on for its scene and sequence triggers. Range: All, TRS, USB.
ProjMidiInCh	The MIDI channel the project listens on for scene and sequence triggers. Range: None, or 1 to 16.

The **Root Note** and **Scale** set the key the grid keyboards play in (see the [Multisample Track](#) and [External Track](#) chapters). **Swing** and **BPM** can also be set from the Tempo pop-up (see the [Sequencing chapter](#)).

The project MIDI input drives the scene and sequence triggers described in the [MIDI chapter](#). For those triggers to fire, set **ProjMidiInCh** to a channel none of the tracks use; if it matches a track's **MIDI In Chan**, that track handles the notes instead.

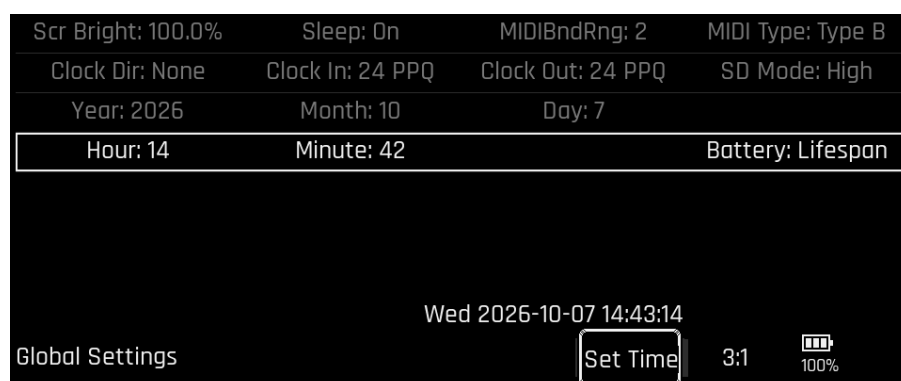
Global Settings

Overview

The Global Settings screen holds the device-wide preferences that apply to every project: screen brightness and sleep, MIDI and clock options, the microSD card access mode, the internal date and time, and the battery charge preference. These are saved with your blackbox 2 — in bb2-stng.mml on the microSD card — not with the loaded project. (Per-project musical and MIDI settings live on the Project Settings screen instead.)

Reach Global Settings by pressing **PROJ** three times: the first press opens the Project Browser, the second opens Project Settings, and the third opens Global Settings.

See and Touch



Global Settings

- The screen shows four rows of knob labels and their values: **Config**, **Clock**, **Date**, and **Time**. The toolbar shows **Global Settings** at the lower-left, with a **Set Time** button.
- Tap the knob bar, or press the up/down buttons, to choose which row the knobs control. The active row is highlighted with a white frame.

Setting the Date and Time

The internal clock timestamps the files you record and save.

- Switch to the **Date** row and set **Year**, **Month**, and **Day** with the knobs.
- Switch to the **Time** row and set **Hour** and **Minute** (on a 24-hour clock).
- Tap **Set Time** to write the date and time to the internal clock.

Push

- PROJ** — opens Global Settings (the third press in the PROJ cycle).

- **Up / Down** — switch among the Config, Clock, Date, and Time rows.

Twist

Config row:

Parameter	Description and Range
Scr Bright	Screen brightness. Range: 0 to 100%.
Sleep	When On , blackbox 2 dims the screen after 2 minutes of inactivity, enters sleep mode after 5 minutes, and powers off after 10 minutes. Sleep mode only applies when running on battery; it is disabled automatically when blackbox 2 is connected to external power. Range: On, Off.
MIDIBndRng	The MIDI pitch-bend range, in semitones. Range: 1 to 12.
MIDI Type	The TRS MIDI output type. Range: Type A, Type B.

The MIDI Type setting applies to MIDI output only. Blackbox 2 automatically detects whether an incoming MIDI signal uses Type A or Type B, so no configuration is needed for MIDI input.

Clock row:

Parameter	Description and Range
Clock Dir	The direction of the TRS clock jack. Range: None, In, Out.
Clock In	The resolution of an incoming clock. Range: 1, 2, 4, 8, 12, or 24 PPQ.
Clock Out	The resolution of the outgoing clock. Range: 1, 2, 4, 8, 12, or 24 PPQ.
SD Mode	The microSD card access mode. High is recommended and favors speed; switch to Comptbl (compatible) if you experience issues with microSD card compatibility.

The TRS clock and MIDI jacks themselves are described in the [Hardware Tour chapter](#).

Time row:

Parameter	Description and Range
Hour	The hour on the internal 24-hour clock (see Setting the Date and Time, above).
Minute	The minute on the internal clock.
Battery	The battery charge preference. Lifespan (the default) limits the charge level to favor long-term battery life; Runtime charges the battery more fully to favor the longest playing time between charges. Range: Runtime, Lifespan.

Managing the microSD Card

The microSD card holds everything blackbox 2 works with: your projects, the factory and user patches, all of the samples, and the device settings. Blackbox 2 ships with a card either in the box or pre-installed.

Always power blackbox 2 off before removing or inserting the microSD card to avoid corrupting data. The card slot and how to insert and eject the card are covered in the [Hardware Tour chapter](#).

We recommend a **SanDisk Extreme A2, 128 GB or larger** — these have consistently outperformed other cards in our testing. The card must use the standard SD format for its capacity: **FAT32** for cards up to 32 GB, or **exFAT** for 64 GB and larger — the same format used by the original blackbox and bento. Format the card with the **SD Card Formatter** from the SD Association, available at sdcard.org/downloads/formatter, which applies the correct format for you.

What's on the Card

Blackbox 2 organizes the card into a few top-level folders, plus a settings file:

- **Projects** — one folder per project, named for the project. Each holds project.xml, which stores all of the project's settings, along with any samples you record into the project. Each multisample set gets its own subfolder so its WAV files stay together.
- **Patches** — the factory patches, sorted into a subfolder per instrument type: **OneShots**, **SamplInst** (multisample), **Loops**, **Slicer**, and **Shredder**. Within each type folder, every patch has its own folder, which holds the patch along with the WAV files it uses. The Patches folder also holds a patchindex.xml file, which the Patch Browser uses to organize the patches by Instrument and Type.
- **UserPatches** — the patches you save yourself, organized the same way: the same per-type folders, each holding one folder per patch with that patch's files and samples, plus its own patchindex.xml for the patches you save.
- **bb2-stng.mml** — the global settings file, holding the device-wide preferences from the Global Settings screen.

Patches store their own WAV files inside their patch folders, and samples you record are stored in the project's folder. Any other WAV files a project uses stay where they live and are referenced by the project until it is packed. The **Pack** command gathers a project's referenced files into its own folder so it travels intact, and **Clean** removes samples a project no longer uses; both are covered in the [Working with Projects chapter](#).

Alongside each WAV file you may also see a matching **<name>.wav.pk** file. Blackbox 2 creates one the first time it draws that WAV's waveform on screen; the .pk file caches the waveform shape so later drawing is faster and uses less memory. You can delete .pk files safely — blackbox 2 recreates the one it needs the next time it displays that file's waveform.

microSD Mode

microSD Mode connects the card to your computer as a USB drive so you can copy projects and samples on and off it, back it up, or load new content — without removing the card from blackbox 2.

1. Connect a USB-C cable from the **PWR/DATA** port to your computer.
2. Press **PROJ** to open the Project Browser.
3. Tap the **menu** icon, then **microSD Mode**. You may be asked to save changes and to confirm that you want to enter microSD Mode.

The card appears as a removable drive on your computer. While blackbox 2 is in microSD Mode, the rest of its functions are unavailable until you leave.

To leave microSD Mode, **eject the drive** on your computer first, then press the **Left arrow** button on blackbox 2.

Eject the drive on your computer before pressing the Left arrow, so the computer finishes writing any pending changes to the card.

Factory Reset

You can restore blackbox 2's original factory patches and projects by copying the original patch and project files back onto the microSD card. > Restoring the factory content overwrites the projects, patches, and > global settings on the card. Back up anything you want to keep first.

1. Download the factory content bundle, which holds the original projects and patches. It is posted in the **Content Bundles** folder on the 1010music community Discord.
2. Connect the card to your computer — either put blackbox 2 into microSD Mode or read the card directly in a card reader (see microSD Mode, above).
3. To restore the patches, copy the factory **Patches** folders onto the card, replacing what is there.
4. To restore the original global settings, copy the global settings file (bb2-stng.mml) to the root of the microSD card.
5. There are two options for restoring factory projects:
 - To restore the original factory Projects while still **leaving your projects in tact**, open the **Projects** folder in the factory content

bundle and copy the subfolders into the **Projects** folder on your card, replacing only those folders.

- To restore the Projects folder back to the original factory state and **erase all of your projects**, copy the Projects folder from the factory content bundle onto the microSD card, replacing all content in that folder. **WARNING:** This method will permanently delete all of the projects you created.
6. If you want to remove the user patches, delete the **UserPatches** folder. **WARNING:** This method will permanently delete all of the patches you created.
 7. Eject the drive, and leave microSD Mode if you used it.

Updating Firmware

1010music releases firmware updates that add features and fix bugs, so it is worth keeping your blackbox 2 current. Updating takes three steps: check the version you have, download the new firmware, copy it to the microSD card, and install it from the boot loader.

Keep blackbox 2 connected to power for the entire update. A firmware update must not be interrupted. Do not run it on battery alone, and do not disconnect power or remove the microSD card while it is installing.

Checking Your Firmware Version

Press **PROJ**. The installed firmware version appears in the lower left corner of the Project Browser screen.

Downloading New Firmware

1. On your computer, visit **1010music.com/downloads**.
2. Find the latest blackbox 2 firmware and download it.
3. If the download is a compressed (ZIP) file, extract it. Inside you will find the firmware file, which must be named exactly **blackbox2.bin** (one word, no space). The boot loader looks for that exact name, so do not rename it.

Compare the version on the website with the version on your unit. If the website's version is newer, continue with the update.

Copying the Firmware to the microSD Card

The firmware file goes in the **root** (top level) of the microSD card. You can copy it there with the card still in blackbox 2, or by reading the card on your computer directly.

Using microSD Mode

This method leaves the card in blackbox 2 and connects it to your computer as a USB drive.

1. Connect blackbox 2 to your computer with a USB-C cable on the **PWR/DATA** port. (If the computer can't supply enough power, use the USB-C Power/Data splitter so blackbox 2 stays powered — see the [Hardware Tour chapter](#).)
2. Press **PROJ**, tap the **menu** icon, then **microSD Mode**. You may be asked to save changes and to confirm.

3. The card appears as a removable drive on your computer. Copy **blackbox2.bin** to the **root** of that drive.
4. Eject the drive on your computer, then press the **Left arrow** button on blackbox 2 to leave microSD Mode.

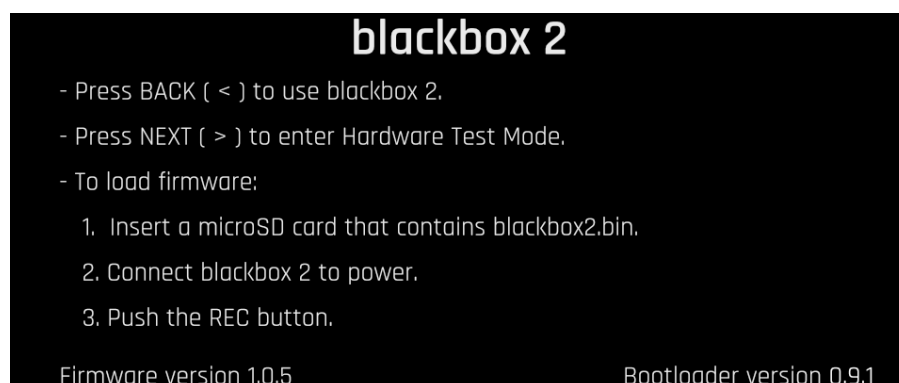
See the [Managing the microSD Card chapter](#) for more on microSD Mode.

By Reading the Card on a Computer

1. Power down blackbox 2.
2. Push the microSD card in gently to release it, and remove it.
3. Put the card in an adapter that fits your computer, and connect it.
4. Copy **blackbox2.bin** to the **root** of the card.
5. Eject the card from your computer and put it back in blackbox 2.

Installing the Firmware

Once the firmware file is on the card, install it from the boot loader.



The Boot Loader screen

1. Make sure blackbox 2 is **connected to power**.
2. Power blackbox 2 down.
3. Hold the **power button** until the **Boot Loader** screen appears.
4. Press the **REC** button to install the firmware.
5. Wait for the update to finish. **Do not disconnect power or remove the microSD card** while it installs.
6. Blackbox 2 restarts automatically when the update is complete.

After it restarts, you can confirm the new version by pressing **PROJ** and reading the version in the lower left corner.

Appendices

Reference material: specifications, troubleshooting, and resources.

Specifications

Display and controls

- 4-inch high-resolution color touchscreen.
- Four knobs, twelve labeled buttons, and four arrow buttons.

Power

- Built-in rechargeable battery, up to 3 hours of play time.
- Charges over the PWR/DATA port from a 20 W or higher USB-C charger; charges faster when powered off.

Tracks

- Four tracks.
- Track types: One-Shot, Loop, Multisample, Slicer, Shredder, and External.

USB

- **PWR/DATA** port — power, USB audio, USB MIDI input, and microSD (disk) mode.
- **MIDI HOST** port — USB MIDI host for controllers and keyboards. This firmware version receives MIDI over USB but does not send it.

MIDI

- TRS MIDI In and Out on 3.5 mm jacks; TRS Type A and Type B (input auto-detected, output selectable).

Clock

- Analog TRS clock, usable as an input or an output, at 1, 2, 4, 8, 12, or 24 PPQ.

Audio

- One stereo input, three stereo outputs (Audio 1, 2, and 3), and a stereo headphone output, all on 3.5 mm TRS jacks.
- Over USB: receives one stereo signal and sends three stereo signals that mirror Audio 1, 2, and 3.

Storage

- microSD card slot.

Troubleshooting

No sound. Check that:

- the transport is running (loops and sequences need the clock to play);
- the track is not muted or hidden by another track's solo, and its level is up on the Mixer;
- you are monitoring the output the track is routed to (Audio 1, 2, or 3, or the headphone output), and the master level is up;
- the audio cable is pushed all the way into the jack.

A track won't play from my MIDI controller. Check that the controller is sending on the channel the track listens on — by default track 1 is channel 1, track 2 is channel 2, and so on. See the [MIDI chapter](#).

The microSD card isn't recognized, or behaves oddly. Always power blackbox 2 off before inserting or removing the card. If a card is unreliable, try the **Comptbl** setting for SD Mode on the Global Settings screen. See the [Managing the microSD Card chapter](#).

We recommend a **SanDisk Extreme A2, 128 GB or larger** — these have consistently outperformed other cards in our testing. The card must use the standard SD format for its capacity: **FAT32** for cards up to 32 GB, or **exFAT** for 64 GB and larger. Format the card with the **SD Card Formatter** from the SD Association, available at sdcard.org/downloads/formatter.

Performance and memory. Blackbox 2 shows a CPU meter on the Tracks screen. Dense polyphony and heavy effects raise the CPU load; if it runs high, reduce the number of simultaneous voices or effects. Samples load into memory, so a project with a very large amount of sample content can run out of room.

Resources

- [blackbox 2 MIDI CC Mapping](#) — the complete per-instrument list of MIDI Control Change assignments, showing which track and instrument parameter each CC controls for every track type. An Excel version is available from the Downloads page at 1010music.com/downloads. See the [MIDI chapter](#) for an overview.
- [1010music Downloads](#) — the latest blackbox 2 firmware, plus other downloads. See the [Updating Firmware chapter](#) for how to install it.
- **blackbox 2 videos on YouTube** — tutorials, walkthroughs, and demos:
 - [1010music's own blackbox 2 videos](#)
 - [Third-party blackbox 2 videos](#)
- [Join the 1010music Discord](#) — the official 1010music community, for support, tips, and shared content. The **Content Bundles** folder there also holds the factory content bundle, for restoring the projects and patches that came with blackbox 2. See Factory Reset in the [Managing the microSD Card chapter](#).