FirstlyMusic

BackAItrack

BackAItrack Pedal User Manual

English version - revision 0.8

Online manual and translations: www.firstlymusic.fr

About this document

This document describes the main functions of the BackAItrack pedal at the time of writing. Some functions, screen labels or technical specifications may change.

The QR code printed on the cover links to a page on the FirstlyMusic website intended to host the online manual and provide access to the site's automatic translation functions.

About BackAItrack

BackAItrack is a pedal designed to give musicians an autonomous, compact and specialised tool capable of playing several synchronised audio tracks.

It is important to understand that this is not a product from a large industrial group manufactured on a very large scale. BackAItrack is a device designed, assembled and individually tested in France, with a small-series approach. This identity involves deliberate technical choices: a direct, independent and specialised solution rather than a standardised mass-production device.

This is particularly true of the **AI SEPARATION** function, which can **split a song into several stems directly inside the pedal, without a computer, phone or internet connection.** This full autonomy has a trade-off: processing time may be perceived as long, because it depends on the computing power available in a compact embedded device.

For uses requiring faster, more precise or more specialised separation, it remains possible - and even recommended - to use an external service, then import the resulting WAV or MP3 files into BackAItrack.

BackAItrack should therefore be understood for what it is: an original, autonomous musical tool, manufactured in small series, with its technical compromises, acknowledged limitations and specific advantages.

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1. Important notes

- BackAItrack is strictly intended for indoor use only.
- Never expose the pedal to water, rain, splashes of liquid or condensation.
- Stop using the product immediately in the event of an unusual smell, abnormal noise, excessive heating, visible damage or abnormal behavior.
- Never use the product near a flame, a major heat source, or inside a closed vehicle exposed to sunlight.
- Use only a DC 9V power supply in good condition, minimum 1A, center negative.
- Reduce all volumes to minimum and power off the equipment before connecting or disconnecting cables.
- Do not block the ventilation grilles located on the sides and rear of the enclosure.
- Do not strike the touch screen or apply strong pressure to it.
- This product is not a toy. Keep it out of reach of children.
- Any unauthorized opening, modification or attempted repair may void the warranty when the defect results from that intervention.
- Before returning the unit for repair, back up the data stored on the device. The memory contents may be erased during servicing.
- All data stored on the device may be lost in the event of failure, incorrect use or accidental deletion. Make regular backups.
- Comply with local waste disposal regulations when disposing of the product, its packaging or accessories.
- Do not use BackAItrack to record, copy, modify, distribute or broadcast copyrighted material without the rights holder's permission.
- FirstlyMusic, the FirstlyMusic logo, BackAItrack, the BackAItrack logo and OVRPICK are registered trademarks.
- Some products, concepts, technical developments, texts, visuals, logos, diagrams, documents and content presented on the FirstlyMusic website are protected by intellectual and/or industrial property rights. Any unauthorized reproduction, representation, modification, exploitation or use of these elements, in whole or in part, is prohibited without prior written consent.

48 V phantom power. Activate 48 V only for compatible condenser microphones. Activating 48 V on dynamic microphones, external audio devices or any incompatible equipment may cause damage.

DC supply 9V, negative center, 1A :

- Do not use a centre-positive power supply.
- Use a quality power supply capable of genuinely delivering 9V DC at at least 1 ampere under load, across the full authorized operating temperature range. Many low-cost power supplies claim this output power even though they cannot actually deliver it. This could cause the pedal to shut down abruptly and may result in loss of unsaved data. Prefer a power supply that has been certified, for example UL / ETL / TÜV / CSA / CB / SGS / Bureau Veritas / DEKRA, etc. See the logos on the product label and the manufacturer's documentation.

2. Controls and quick product overview

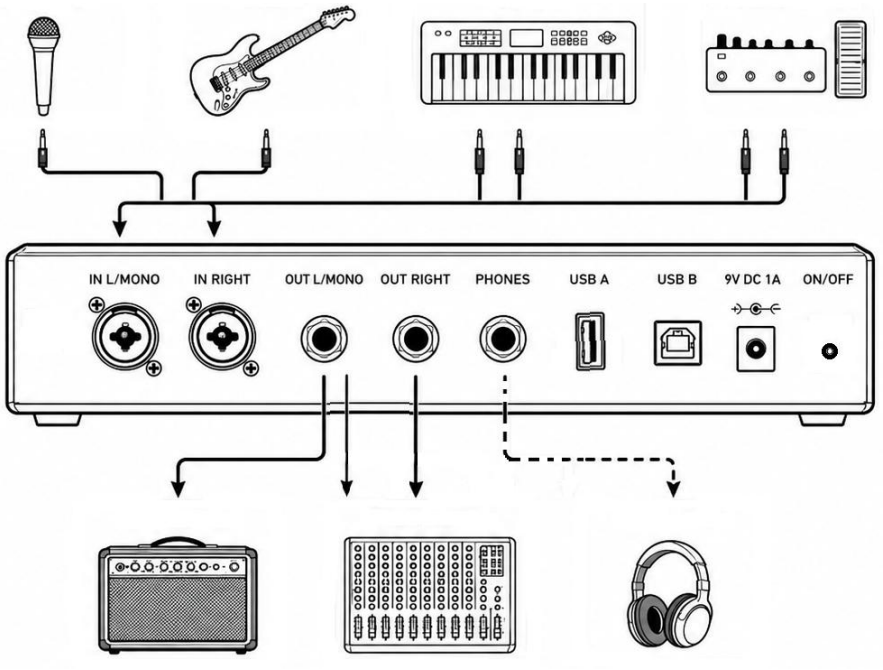
2.1 Controls and connectors

The references below describe the main functions of the enclosure.

Reference	Element	Function
1	ON/OFF push button	Long press: starts power-up or opens the shutdown screen.
2	Colour touch screen	6.75-inch colour TFT LCD screen, 480 x 1280 pixel matrix.
3	Indicator LED	Indicates the operating status of the device.
4	Volume / rotary encoder	Controls the general volume and headphone output. Short press then rotate: navigation or adjustment of the selected control.
5	DC 9 V power input	5.5 x 2.1 mm barrel connector, center negative, recommended power supply 1 A min.
6	USB-B port	PC/Mac connection via USB 2.0.
7	USB-A port	USB flash drive connection for importing or copying compatible files.
8	PHONES	6.35 mm jack headphone output.
9	OUT RIGHT	Right 6.35 mm jack output for stereo wiring.
10	OUT LEFT / MONO	Left 6.35 mm jack output. Use this output alone for mono wiring.
11	IN RIGHT	Right combo XLR / 6.35 mm jack input. Instrument, keyboard, microphone or compatible analogue source input.

12	IN LEFT / MONO	Left or mono combo XLR / 6.35 mm jack input. Instrument, keyboard, microphone or compatible analogue source input.
13	START / STOP ALL	Starts or stops synchronized playback of the loaded tracks.
14	TRACK 1	Switches between the HIGH and LOW level of track 1.
15	TRACK 2	Switches between the HIGH and LOW level of track 2.
16	TRACK 3	Switches between the HIGH and LOW level of track 3.
17	TRACK 4	Switches between the HIGH and LOW level of track 4.
18	PREVIOUS	Short press: previous project. Long press: fast rewind within the song.
19	NEXT	Short press: next project. Long press: fast forward within the song.
20	Ventilation grilles	Do not block the grilles located on the left, right and rear of the enclosure.

XLR connectors. Due to the mechanical layout of the enclosure, the combo XLR sockets do not have locking latches. Make sure the connectors are properly inserted before use.



2.2 What is BackAItrack?

BackAItrack is a musician-devoted pedal able to read multitrack backintracks. Each track can be adjusted independently. In particular, the footswitches allow you to quickly switch each track from a HIGH level to a LOW level. The LOW level can, for example, be set to zero if you want to mute a track on demand during rehearsal.

BackAItrack can be used for personal practice, preparing a rehearsal, replacing a missing member of a band, supporting a group, isolating certain elements of a song, and organizing several songs as saved projects.

2.3 Quick guide: general operation

The basic workflow is as follows: prepare or import 1 to 4 audio files, assign them to the project tracks, then adjust the levels, tempo, and pitch according to your practice or performance needs.

- The tracks — WAV or MP3 audio files — can come from a DAW (Digital Audio Workstation) such as Ableton, FL Studio, Cubase, etc.; from notation software such as Guitar Pro, Sibelius, etc.; from a personal recording; from an online stem-separation service such as Moises, LALAL.AI, BandLab, LANDR, etc.; or simply from the built-in AI SEPARATION function available directly in the pedal.
- The STORAGE menu lets you browse, copy or organize the files available on the device and on a USB flash drive. Files are imported into the pedal's internal storage via a USB flash drive or the USB-B connection. Once these files are available in the pedal's internal storage, you can select them and add them to a project. Files cannot be added to a project directly from the USB flash drive or from the USB-B connection.
- Once the tracks are loaded, they appear on the TIMELINE screen as waveforms.
- The LEVELS menu lets you adjust the MASTER volume and the HIGH / LOW levels of the four tracks.
- The TEMPO & PITCH menu lets you slow down, speed up or transpose the project within the available limits.

Function	Description
Tracks	Simultaneous playback of up to 4 tracks.
Formats	WAV and MP3 compatibility.
Projects	Saves associated files, track names, levels, tempo, pitch and related settings.
Foot control	START / STOP ALL, tracks 1 to 4, PREVIOUS and NEXT.
Interface	Colour touch screen, rotary encoder and menus currently available in French and English.

3. Getting started

3.1 Before you start

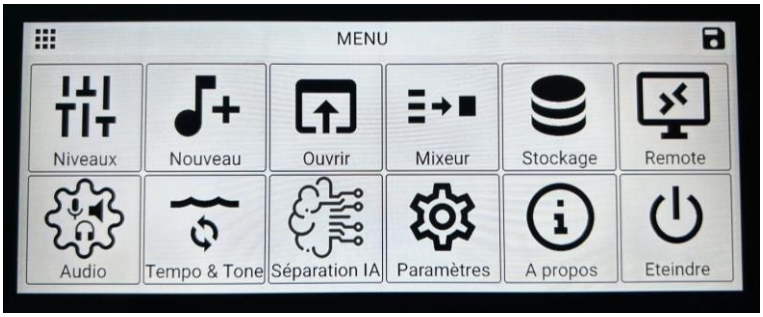
- Reduce the volume of the amplifier, speakers, mixing console and headphones before powering on.
- Connect the audio cables before starting playback.
- Power-on order: turn on BackAItrack first, then connected devices, then amplification.
- Power-off order: turn off amplification first, then connected devices, then BackAItrack.
- If you are using a compatible condenser microphone, activate phantom power from MENU > AUDIO. Disable it in all other cases.

3.2 Start-up

- Connect BackAItrack to a DC 9 V, 1 A min, center-negative power supply.
- Press and hold the rear ON/OFF push button until the indicator LED lights up.
- Wait for the start-up screen to appear. Software loading may take a few seconds.
- Press OK on the start-up screen, or press one of the footswitches to access the main screen.

- You arrive on the TIMELINE screen. If no project was previously loaded, no waveform is displayed.

- Then open MENU to create a project, open an existing project, import files or access settings.



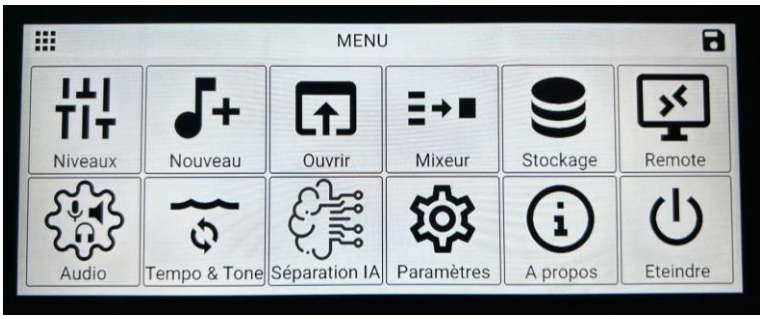
- Pressing MENU again returns to the TIMELINE screen.

4. Interface overview

The interface consists of three main areas: a top bar, a central area and a bottom bar. Menus are accessed via the icon at the top left of the screen.

Area	Role
Top bar	Access to MENU, project title display, save function, USB indication and status information.
Central area	Displays the active screen: TIMELINE, settings, file browser, STORAGE, AI SEPARATION or menu.
Bottom bar	Displays, among other information, the playback position and total song length.

Le MENU principal regroupe les fonctions de travail courantes : LEVELS, NOUVEAU, OUVRIR, MIXER, STORAGE, REMOTE, AUDIO, TEMPO & PITCH, AI SEPARATION, SETTINGS, ABOUT et SHUTDOWN.



MENU > SETTINGS lets you choose the interface language. The currently available languages are French and English; the choice is retained after restart.

Pressing MENU again returns to the TIMELINE screen.

5. Physical controls

Control	Action	Result
ON/OFF	**Long press**	Power-on or opening of the shutdown screen.
START / STOP ALL	Short press	Starts or stops synchronized playback of the tracks.
TRACK 1 to TRACK 4	Short press	Switches the corresponding track between its HIGH level and LOW level. **If the track is recording: stops recording.**
TRACK 1 to TRACK 4	**Long press**	**Starts or stops recording on the track.**
PREVIOUS	Short press	Moves to the previous project.
PREVIOUS	**Long press**	**Fast rewind within the song.**
NEXT	Short press	Moves to the next project.
NEXT	**Long press**	**Fast forward within the song.**
Rotary encoder	Rotation	Adjusts the general volume, headphone output volume, or modifies the selected control.
Rotary encoder	Short press + rotation	Activates selection of an on-screen control, then allows navigation or adjustment.

Navigation without touching the screen. When the encoder selects a control, the selected state automatically disappears after a few seconds of inactivity. You can return to touch-screen operation at any time.

6. Projects

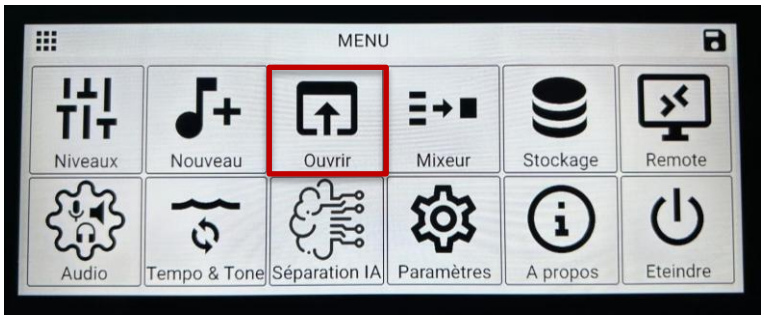
A project gathers the information required for a work session: associated audio files, track names, HIGH / LOW levels, MASTER volume, tempo, pitch and project-related audio settings.

Action	Method
Create a project	MENU > NEW . If the project contains unsaved modifications, a confirmation screen will popup.
Open a project	MENU > OPEN , then select the project in the list.
Save	SAVE button in the top bar. A message confirms success or reports failure.

Quickly change project	Short press on PREVIOUS or NEXT.
Rename a project	Tap the project title in the top bar, enter the new name, then confirm.
Organize projects	From MENU > OPEN, available icons can permit to reorganize the project order. **This order – from TOP to DOWN – determines the project order loaded by PREVIOUS and NEXT footswitches.**
Copy a project	Duplicate an existing project when the function is available in the project management screen.
Delete a project	Delete the selected project after confirmation. Always check that the project is no longer needed before confirming.
Name already exists	If another project has the same name, the device may offer to overwrite the existing project. Check the name before confirming.

TIPS: Arrange your PROJECTS in the order in which you want PREVIOUS and NEXT navigation to run through them:

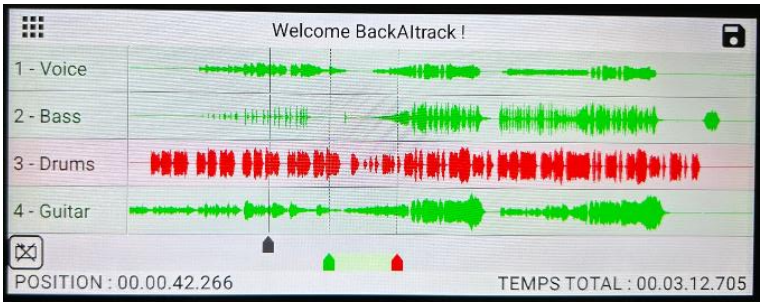
- OPEN
- Press the icon that allows you to change the order of the different projects. A new icon appears . Notice that the icons on the right side of the screen change from greyed out to available. You can then select one of the projects (blue rectangle) and move it using the “up” and “down” arrows on the right side of the screen.
- When a project is selected, pressing the icon creates a copy of it.
- When a project is selected, pressing the icon deletes it. A confirmation window appears.
- **Warning: any deletion is permanent.**



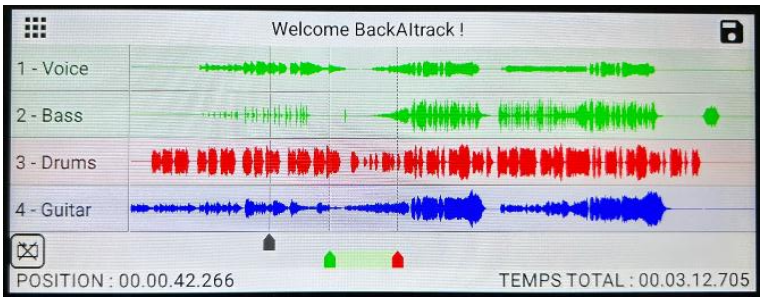
7. Main screen: TIMELINE

The **TIMELINE** is the main working screen. It displays up to four synchronized audio tracks at the same time position. When no project or file has been loaded, it remains empty.

Element	Action
Nom de track	Tap the name to edit it.
Empty + area	Tap to choose an audio file to assign to the track.
Waveform	Displays the audio content. **A long press on the waveform can be used to delete the track after confirmation.**
Time slider	Allows you to move through the song by touch or via encoder navigation.
Loop	Activates a repeated section with a start point and an end point, controlled by touch or by encoder.



- GREEN: the track is active and audible.
- RED: the track is set to its LOW level. Depending on the setting chosen in LEVELS, this LOW level can be either a simple attenuation or a complete mute.
- BLUE: track currently recording.



8. Loading audio files

- From the TIMELINE, tap the + icon on an empty track.
- Select a WAV or MP3 file from **internal storage** (LOCAL).
- Confirm the selected file.
- Rename the track.
- Repeat the operation for the other tracks if necessary.

The loaded files are played simultaneously and remain synchronized.

TIPS:

- Loading a project will take longer if it includes one or more MP3 tracks than if it contains only WAV tracks. Whenever possible, use WAV files.
- A long press on a track in the TIMELINE menu is enough to erase it, allowing it to be replaced.
- Remember to rename the tracks, for example according to the instruments they contain.

9. Playback, navigation and loop

Action	Method
Play / stop	Short press on START / STOP ALL.
Move through the song	Move the position slider on the TIMELINE. This can be done by touch or with the encoder for more precise positioning.
Fast forward	Hold NEXT.
Fast rewind	Hold PREVIOUS.
Change project	Short press on NEXT or PREVIOUS.

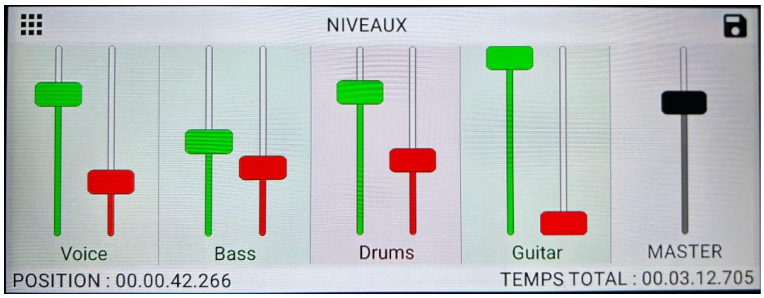
Work on a specific passage	Activate the loop, then set the start and end of the section to repeat. The start and end sliders can be positioned by touch or with the encoder for greater precision.

10. Levels, mixing and audio settings

10.1 MENU > LEVELS

The LEVELS menu lets you individually adjust the HIGH and LOW levels of each project track, as well as the general playback volume of the tracks contained in the project (MASTER).

Note: line input parameters are adjusted in MENU > AUDIO.



- Adjustment of the project MASTER volume, i.e. the tracks contained in the project.
- Independent adjustment of each track's HIGH level.
- Independent adjustment of each track's LOW level.
- The LOW level can be set to zero to completely mute a track, or to an intermediate value for partial attenuation.
- The TRACK 1 to TRACK 4 footswitches switch between the HIGH level and the LOW level of their respective track.

TIPS:

- Once saved, all these levels are specific to the project.
- Use the rotary encoder for more precise adjustment of each slider.
- The LOW level can, if required, be set to the same value as the HIGH level, but it can never exceed it.
- The HIGH level can be adjusted to obtain partial attenuation of each track, and therefore set the song MIX.

10.2 MENU > AUDIO

The AUDIO menu is used to adjust sound input and output parameters before the work session. It lets you configure BackAltrack inputs and outputs, then adapt their levels to the instruments, microphones, amplifiers, mixing consoles or headphones being used.

It includes the following settings:

- **MONO** or **STEREO** input mode;
- **PAD** input attenuation;
- **PREAMP** input gain;
- **48V** phantom power;
- **MASTER** digital level;
- **MONO** or **STEREO** output mode;
- **OUTPUTS** line output level;
- **HEADPHONES** output level.

Setting	Description
Input / output mode	Mono or Stereo selection. Tap the rectangle for INPUTS or OUTPUTS to switch from MONO to STEREO and vice versa. 
Input gain or attenuation	Line input level adjustment. This setting is linked to the project when saved with the work session.
Output attenuation	Line output level adjustment. Global device setting.
Main volume	Global output level. Check this before starting playback through external amplification.
48V 	Phantom power with confirmation and safety warning. Press the “48V” square to switch from inactive to active. Activate only for a compatible condenser microphone.
Headphones	The headphone level can be adjusted via the rotary encoder when no on-screen control is selected, or via its setting in the AUDIO menu.

TIPS: when no on-screen control is selected, the rotary encoder adjusts the general volume of the OUT outputs and the PHONES headphone output while preserving the level difference between OUTPUTS and HEADPHONES previously stored within the current project.

Input configuration: MONO or STEREO

The **INPUTS** setting determines how the two input connectors on the rear of the pedal are used.
In **MONO** mode, use the **IN L/MONO** input to connect a mono source, such as a guitar, microphone or the mono output of an effects pedal.
In **STEREO** mode, both inputs are used together:

- **IN L/MONO receives the left channel;**
- **IN RIGHT receives the right channel.**

This mode is particularly suitable for keyboards, effects pedals or other devices providing a stereo signal.

PAD setting

The **PAD** setting applies **attenuation** to the analogue signal as soon as it enters BackAItrack. It is mainly useful when a source provides a high level, for example:

- A keyboard;
- A drum machine;
- The output of a mixing console;
- An effects pedal with a high output level.

If the sound is saturated or distorted while the **PreAMP** setting is low, increase **PAD** attenuation.
For a guitar or microphone delivering a relatively low signal, normally keep **PAD** at its minimum value.

Setting PreAMP

The **PreAMP** setting increases the level of the signal received at the inputs. It adapts low-level sources, especially some microphones or instruments. Set **PREAMP** to obtain sufficient level without saturation or distortion. If the signal becomes harsh, compressed or abnormally distorted, reduce the gain.

The **PAD** and **PreAMP** settings should be used together:

- **PAD reduces an excessively strong signal;**
- **PreAMP amplifies a signal that is too weak.**

48V phantom power

The **48V** button activates phantom power for compatible condenser microphones connected to the XLR sockets.
Never activate 48V with a dynamic microphone, guitar, keyboard, effects pedal or any other device that does not require phantom power.

Reduce levels before activating or deactivating **48V**.

MASTER setting

The **MASTER** slider adjusts the general level of the audio tracks played by BackAItrack. This setting is applied digitally to the project tracks, after individual track settings and tempo or pitch processing.

MASTER therefore acts on:

- Audio files played from the TIMELINE;
- The digital mix of the project tracks;
- The digital signal sent to the outputs.

It does not affect the analogue signal coming directly from the inputs. This signal is sent to the outputs through a direct path to avoid perceptible latency while you play. Therefore, if you only reduce **MASTER**, the backing tracks become quieter, but the level of your instrument or microphone connected to the inputs may remain unchanged.
To reduce both the track level and the live input signal at the same time, use the **OUTPUTS** setting or the rotary volume knob.

Output configuration: MONO or STEREO

The OUTPUTS setting selects the line output operating mode.
In MONO mode, use the OUT L/MONO jack alone. This mode is suitable for an amplifier, powered speaker or mono input on a mixing console.

In STEREO mode, use both outputs:

- **OUT L/MONO for the left channel;**
- **OUT RIGHT for the right channel.**

This mode is suitable for a mixing console, audio interface or stereo amplification system.

OUTPUTS level

The **OUTPUTS** slider adjusts the analogue level sent to the **OUT L/MONO** and **OUT RIGHT** connectors.
It acts on the final signal, including:

- The project audio tracks;
- The signal received on the inputs;
- The overall mix sent to the line outputs.

Use this setting to adapt BackAItrack to the sensitivity of the amplifier, mixing console or connected audio system.

To preserve the dynamics of the digital signal, avoid permanently using an extremely low **MASTER** value. It is generally preferable to keep **MASTER** at a reasonable level, then adjust listening volume with **OUTPUTS**.

HEADPHONES level

The **HEADPHONES** slider adjusts the level of the headphone jack on the rear of the pedal. This setting is independent of the initial level set for the line outputs, so you can keep a headphone listening level different from the level sent to an amplifier or mixing console.
Always start with a low level, then increase it gradually to protect your hearing.

Common adjustment with the rotary knob

BackAItrack's VOLUME/ENTER rotary knob lets you change OUTPUTS and HEADPHONES levels simultaneously. The existing level difference between the two settings is preserved while rotating.
For example, if the headphones are set 10 dB lower than the line outputs, this 10 dB difference is maintained when you increase or decrease the volume with the rotary knob. You can therefore adjust the general listening level in one movement without losing the previously defined balance between line outputs and headphones.

Brief noises when adjusting outputs

The OUTPUTS and HEADPHONES settings are applied directly in the audio codec to the analogue signal. They change in 0.5 dB steps.
When an output level is changed, a brief "click" or "pop" may be audible in the audio chain. This can occur both when moving the OUTPUTS slider on screen and when using the VOLUME/ENTER rotary knob.

This noise does not indicate a malfunction. It appears only when the analogue level is changed and stops as soon as the adjustment is complete.

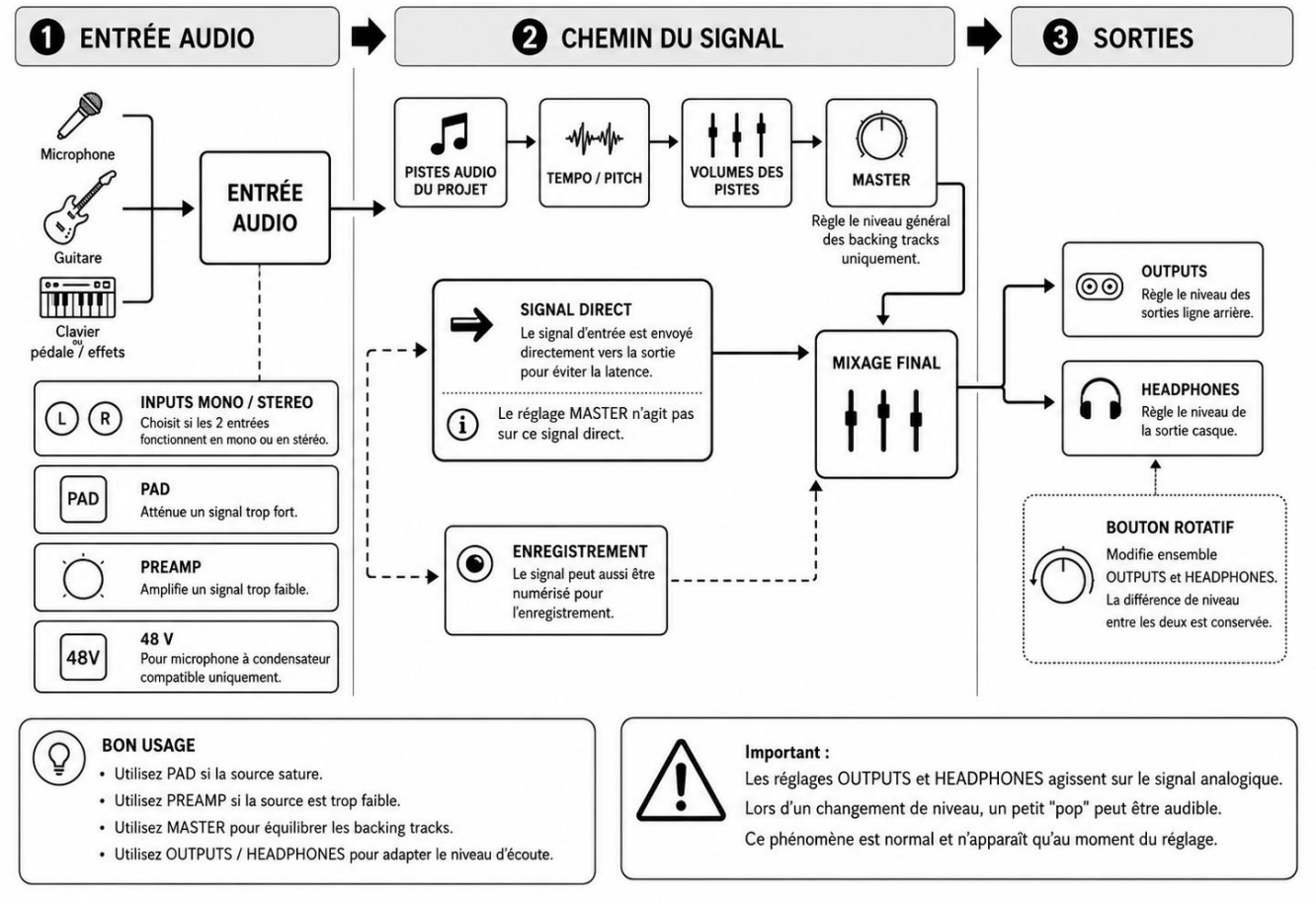
To reduce its perception:

- Preferably adjust output levels before starting playback;
- Reduce the amplifier or mixing console level before a major change;
- Avoid continuously changing OUTPUTS level during a performance;
- Use track levels or MASTER for routine backing-track adjustments.

Recommended setting method

- Select the **MONO** or **STEREO** mode that matches your cabling.
- Adjust **PAD** and **PreAMP** according to the level of the connected source.
- Activate **48 V** only if you are using a compatible condenser microphone.
-
- Set **MASTER** to a normal operating level.
- Then adjust **OUTPUTS** and **HEADPHONES** according to your listening system.
- Avoid changing analogue output levels during passages where a click could be distracting.

In summary



10.3MENU > MIXER

The MIXER menu lets you create a single WAV audio file from two to four files chosen from the available files stored in the pedal (local).

- Add two to four compatible files, without adding the same file twice.
- Start mixing using the on-screen button.
- Wait for export to finish; the generated file is a WAV file.
- Assign the generated file to a track if necessary. By default, the file may be named MIX.wav, then MIX_1.wav, MIX_2.wav, etc. if the name already exists.

TIPS:

- This function is useful, for example, for grouping several stems before assigning them to a project track, so that during playback all instruments from the original song are played, not only part of them.
- To rationalise and clarify your productions, systematically rename the generated MIX.wav, MIX_1.wav, MIX_2.wav, etc. files.

11. Recording on a track

- Load the required tracks into the project.
- Start playback with START / STOP ALL.
- **Hold the target track footswitch for a few seconds to start recording.**
- Press the same footswitch again to stop recording (short press).
- A long press on another track may stop the active recording.
- Pressing the save icon offers to save the recorded track.
- At the end of playback, the device offers to save the recorded track.

- If you want to replace a project track with the recording, save the project afterwards.

Note: It is not possible to record onto an empty track. However, the BackAItrack software is continuously evolving, and a future update should make this operation possible.

12. TEMPO & PITCH

The TEMPO & PITCH menu lets you change the project tempo and/or pitch without modifying the source files.

Parameter	Range	Default value
Tempo	-50% to +100%	0 %
Pitch	-12 to +12 semitones	0

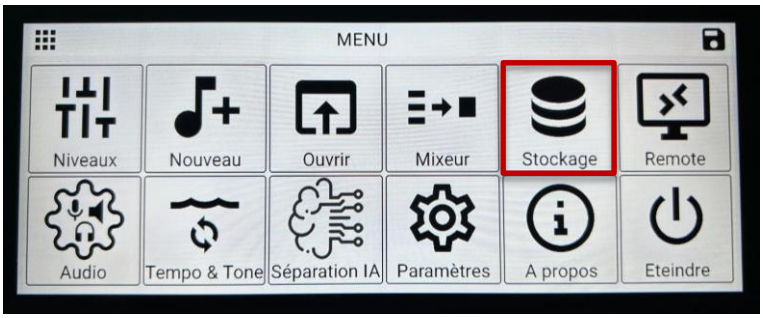
TIPS:

- These settings are project-specific and can be stored by saving. When leaving the project, if no save is performed, the initial TEMPO and PITCH values of the project will be restored.
- For more precise adjustment, use the rotary encoder.
- The icon returns the song's TEMPO and KEY to their initial positions.

13. STORAGE and USB flash drive

TIPS: exFAT, FAT32 and NTFS formats are recognized.

The STORAGE menu lets you browse internal storage and USB volumes, open folders, view files and perform management operations according to the available options. It works like a dual-panel file manager.



- The left panel displays, for example, internal storage (LOCAL).
- The right panel displays, for example, the USB flash drive when connected; otherwise, it can display internal storage.
- The central controls let you copy files from one panel to the other, or delete selected items after confirmation. To select a file in either column, simply tick the corresponding box next to it, either by touch or using the rotary knob.
- A long press on a file or folder lets you rename it.

- In the event of a name conflict during copying, a confirmation message may offer to overwrite the existing file.

TIPS: before removing a USB flash drive, press the icon and wait for the message indicating that removal is safe.

14. AI SEPARATION

The AI SEPARATION function can split a WAV or MP3 file into several stems:

- **Bass**
- **Drums**
- **Guitar**
- **Piano**
- **Vocals**
- **Other** (other musical elements)

From these 6 stems, you can:

- Create a new project and select 4 stems from the 6 generated files;
- From two or more stems, create a new file using the MIXER menu, for example a track combining “Piano” and “Other”, then use this file in your project;

<u>Operating procedure:</u>

- Ouvrez MENU > AI SEPARATION.
- Select a WAV or MP3 file from internal storage.
- Confirm the start of processing.
- Wait for separation to finish. Processing can be long; the displayed progress is indicative.
- Retrieve the generated files from the stem folder created next to the source file, usually in the form <file_name>_STEMS.

TIPS:

- **For faster or more specialised separation** (musical instruments other than bass-drums-guitar-piano-vocals, for example), stems can of course be prepared on a computer using dedicated software - such as a DAW - or through an external internet service, then imported into BackAItrack.
- **Processing quality and duration depend heavily on the length and quality of the source file.**
- The MIXER menu is useful for grouping several stems before assigning them to a project track, so that during playback all instruments from the original song are played, not only part of them.

Below are a few estimated STEM separation processing times.

A quick rough estimate is to allow processing of approximately 20 to 25 times the duration of the original song. The file type to be processed - WAV or MP3 - has little effect on the total duration of the operation.

All generated stem files are in WAV format, regardless of the original file type.

Reminder: BackAItrack offers the possibility of performing stem separation in standalone mode, without an internet connection or third-party device. However, for faster separation it is of course always possible - and recommended - to prepare the stems on a computer, for example via an external online service, then import them into BackAItrack.

Duration of song to process		Estimated processing time	
In seconds	In minutes	In seconds	In minutes
100	1.7	~2300	~38
200	3.3	~4100	~68 (1 hour and 8 minutes)
250	4.2	~5100	~85 (1 hour and 25 minutes)
300	5	~6100	~102 (1 hour and 42 minutes)

TIPS:

- **You can continue to use the other menus while the pedal performs stem separation. However, due to the heavy load on the processor cores, latency or audio artefacts may occur.**
- If a poor-quality power supply is used - one that cannot genuinely deliver 9V 1A under load across the authorized operating range - the pedal may shut down abruptly and unsaved data may be lost.

15. Typical workflow: preparing a rehearsal session

- Turn on BackAItrack with the ON/OFF button and confirm the start-up screen with OK.
- Once on the TIMELINE, open MENU.
- If necessary, change the language via MENU > SETTINGS. The currently available languages are French and English.
- Create a new project with MENU > NEW or load an existing project with MENU > OPEN.
- If the tracks are not yet in the pedal, import them from MENU > STORAGE, or import them into local memory from a USB flash drive.
- If you want to create stems directly in the device, use MENU > AI SEPARATION before assigning tracks.
- Check input and output levels in MENU > AUDIO.
- Set track HIGH and LOW levels, as well as MASTER, in MENU > LEVELS.
- Work from the TIMELINE: playback, loop, project change, tempo or pitch adjustment if needed.
- Save the project.
- Shut down the pedal properly with MENU > SHUTDOWN or by long-pressing ON/OFF, then confirm with the green SHUTDOWN button.

16. Shutting down the device

- Reduce the amplifier or mixing console volume.

- Open MENU > SHUTDOWN, or hold the rear ON/OFF push button.
- Confirm shutdown with the green SHUTDOWN button.
- Wait until the device is completely off before disconnecting the power supply.

17. External backups & connection to a computer

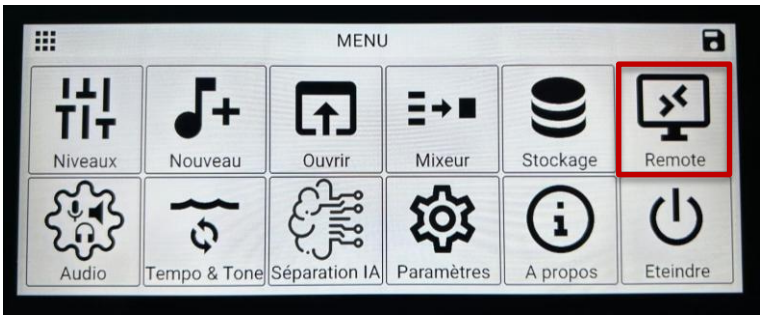
Important: a BackAItrack project is made up of several elements: primarily links to the audio files present locally in the pedal (i.e. not the files themselves), track names, levels, tempo, pitch and associated settings. **If you want to keep an external copy of a project so that it can be recreated later, you must separately back up each audio file that makes it up**.

"External backup" therefore does not automatically recreate a complete project. If you want to reuse these files later in BackAItrack, you will need to re-import them into the device, create or open a project, then assign each audio file again to the desired tracks.

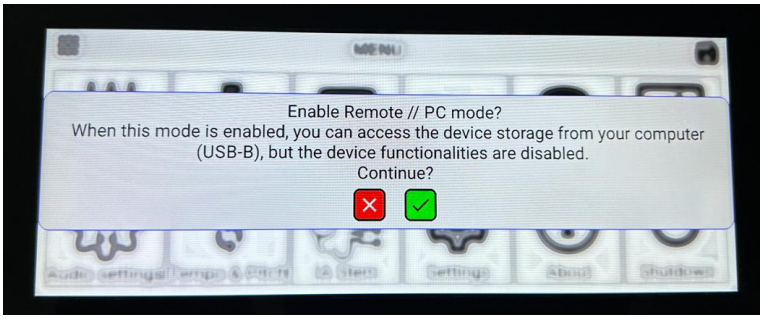
BackAItrack allows you to back up audio files stored on the device to a PC or Mac, or to a USB flash drive, using the USB-B and/or USB-A ports on the rear of the pedal.

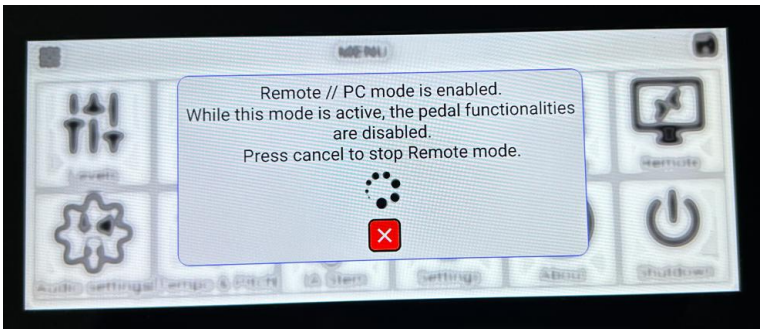
To perform an external backup via computer connection:

- Turn on BackAItrack.
- Connect a USB cable (not supplied) between the pedal's USB-B port and your PC or Mac.
- Open MENU > REMOTE



- Confirm activation of the connection with the computer. **During the connection, to ensure file and storage integrity, the player is stopped and access on the pedal is locked.**





- Wait until BackAltrack appears on your computer as an external storage device.
- From your computer, **copy** the desired WAV, MP3 files or folders to a backup folder on your computer.
- From your computer, you can also **import** the desired WAV, MP3 files or folders from your computer to the pedal's local memory.
- Once copying is complete, correctly eject the device from your computer.
- On BackAltrack, exit MENU > REMOTE before disconnecting the USB cable.

<u>To perform an external backup via a USB flash drive (see section 13 of this document):</u>

- Turn on BackAltrack.
- Connect a USB flash drive to the USB-A port.
- Ouvrez MENU > STORAGE.
- The STORAGE menu works like a dual-panel file manager. The left panel displays, for example, internal storage (LOCAL). The right panel displays, for example, the USB flash drive when connected.
- Copy the desired WAV or MP3 files to a backup folder on your USB flash drive.
- Once copying is complete, correctly eject the USB flash drive.

TIPS:
- The central controls in the STORAGE menu let you copy files from one panel to the other, or delete selected items after confirmation.
- A long press on a file or folder lets you rename it.
- In the event of a name conflict during copying, a confirmation message may offer to overwrite the existing file.

18. Update

BackAltrack can be updated using a file downloaded from the FirstlyMusic website.
This operation installs the latest version of the device's internal software.

This procedure must be performed with a stable power supply, and the pedal must not be switched off during the update.

To update BackAltrack:
• Go to the FirstlyMusic website from a computer.

• Download the latest available update file for the BackAItrack pedal, located in the NEWSLETTER section, Updates / Download category.

Update file format: DDDDDDXXXXXX_X.X.X.backaitrack.update

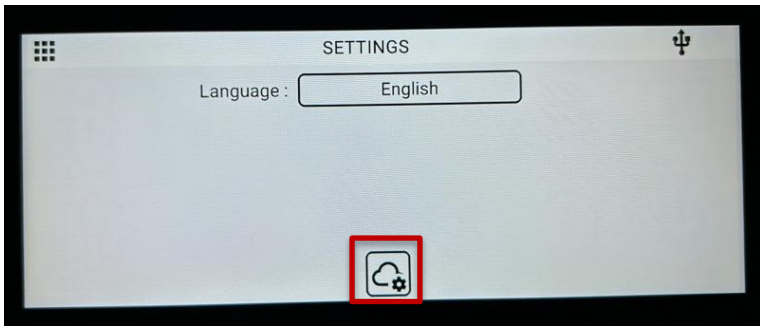
Date

Release no.

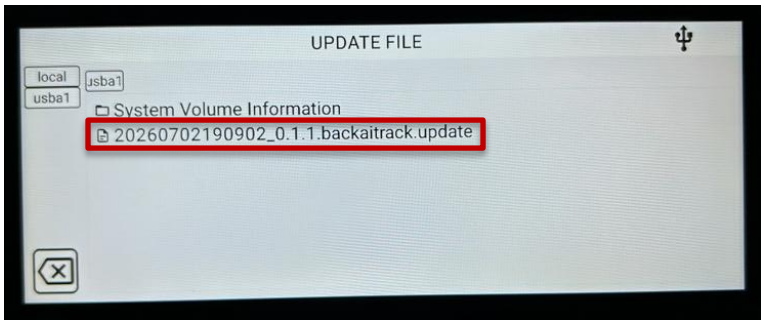
• Copy this file to the root of a USB flash drive.
• Correctly eject the USB flash drive from the computer.

• Turn on BackAItrack.
• Insert the USB flash drive into the pedal's USB-A port.

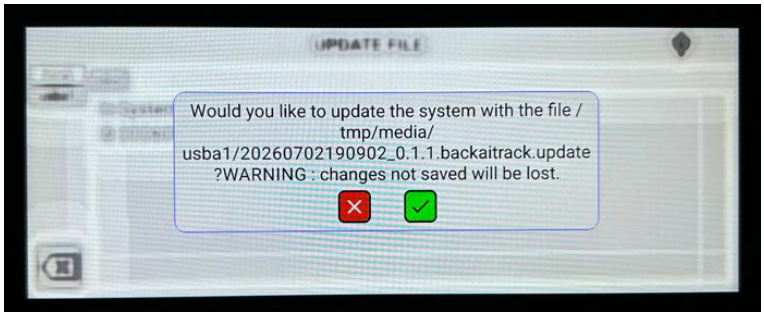
• Open MENU > SETTINGS.
• Select the update icon.



• Select the UPDATE FILE.



• When the file is selected, confirm installation.



• Wait for the update to finish completely.
• When BackAItrack prompts you, remove the USB flash drive and restart the device.

During the update, do not disconnect the power supply, remove the USB flash drive or press the ON/OFF button. Interrupting installation may prevent the software from starting correctly.

19. Cleaning et entretien

19.1 Cleaning

- Turn off the pedal and disconnect all cables before cleaning.
- Use only a soft, dry, clean cloth.
- Never use water, alcohol, solvent, acetone or abrasive products.

19.2 Enclosure

The enclosure is designed for normal use with a musical instrument. However, it can be damaged by excessive heat, excessive mechanical stress, impacts, deep scratches or certain chemicals.

- Do not expose the pedal to prolonged direct sunlight, a flame, a radiator or a powerful spotlight placed too close.
- Do not sand, drill, cut, bend, heat or modify the enclosure.
- Do not apply glue, paint, varnish or chemicals to the enclosure.
- Avoid friction with hard or abrasive objects, especially on the screen.

20. End of life, recycling and warranty

20.1 Disposal and recycling

- Do not dispose of this product with household waste.
- Take the complete product to a collection point suitable for electrical and electronic equipment.
- Comply with applicable local laws and regulations.
- Do not attempt to disassemble the product before disposal.

20.2 Warranty and support

The product is covered by the applicable statutory warranties.

For any question about the product, its use, recycling or a fault, refer to the FirstlyMusic website.

Any return for possible repair must first be approved for shipment by FirstlyMusic.

21. Main specifications

Category	Data
Dimensions	Length: 360 mm; width: 137 mm; height: 65 mm.
Weight	1.1 kg.
Power supply	DC 9 V, center negative, recommended power supply 1 A.
Average consumption	4.5 W (9 V / 0.5 A)
Maximum consumption	9 W (9 V / 1 A)
Screen	6.75-inch color TFT LCD touch screen, 480 x 1280 pixel matrix.
Tracks	Simultaneous playback of up to 4 tracks.
Switches	7 footswitches
Audio formats	WAV and MP3.

Sampling frequency	44.1 kHz.
AD/DA conversion	32 bits
Connectors	Combo XLR / 6.35 mm jack inputs; 6.35 mm jack outputs; 6.35 mm headphone output; USB-A; USB-B; 5.5 x 2.1 mm power input.
Processor	ARM Cortex-A72 64-bit, 4 cores, 1.5 GHz; 2 GB SDRAM; 32 GB eMMC
Recording / Playback	Number of tracks: 4 Data format: WAV (44.1 kHz & 48 kHz, 32-bit float, stereo) & MP3
Maximum input level	0 dBu
Input impedance	>80 k Ohms
Maximum output level	+5 dBu
Line output impedance	< 1k Ohms
Preamp gain	0 --- 60 dB
Input dynamic range	93dB (0-dB gain; 1-kHz, –60-dB full-scale input signal)
Output dynamic range	97dB (A-weighted, –60-dB input full-scale signal, output volume 0dB)
Minimum headphone impedance	16 Ohms
Frequency response	20 Hz – 20 kHz (-3.5dB, +0 dB)
Permitted ambient temperature range	0°C to +40°C The product is intended exclusively for indoor use, i.e. in a domestic-type environment.

Note: 0 dBu = 0.775 Vrms.

Third-party software and licences.

This notice does not constitute legal advice. It is intended to inform the user about embedded components.

BackAItrack is a FirstlyMusic product. The application, interface and business logic are proprietary works. The third-party software listed below remains the property of its respective authors and is distributed under its own open-source licences or specific terms.

Application - linked libraries

Composant	Licence
Qt 5.15.14 (Core, Widgets, Svg, XCB)	LGPL v3
PortAudio v19.07 - audio inputs / outputs	MIT
libsndfile 1.2.2 - WAV files	LGPL v2.1+
mpg123 1.32.6 - MP3 files	LGPL v2.1
SoundTouch 2.3.3 - tempo and pitch	LGPL v2.1+
libgpiod 1.6.5 - buttons and GPIO	LGPL v2.1+
Roboto (Google Fonts) - interface font	Apache 2.0

Stem separation

Composant	Licence
Demucs 4.0.1 (Meta / Facebook Research)	MIT
htdemucs_6s model (Meta pretrained weights)	MIT
PyTorch 2.8.0, torchaudio 2.8.0	BSD-3-Clause
Docker Engine 27.3.1, Docker CLI 27.3.1	Apache 2.0
containerd 1.7.23, runc 1.2.0	Apache 2.0 / LGPL v2.1

Image: mashreghi/demucs:v2.0 (also includes: numpy, openunmix, einops, soundfile, omegaconf, PyYAML, tqdm and other Python dependencies)	MIT, BSD, MPL 2.0

Embedded system: system image based on Buildroot 2024.11-rc3.

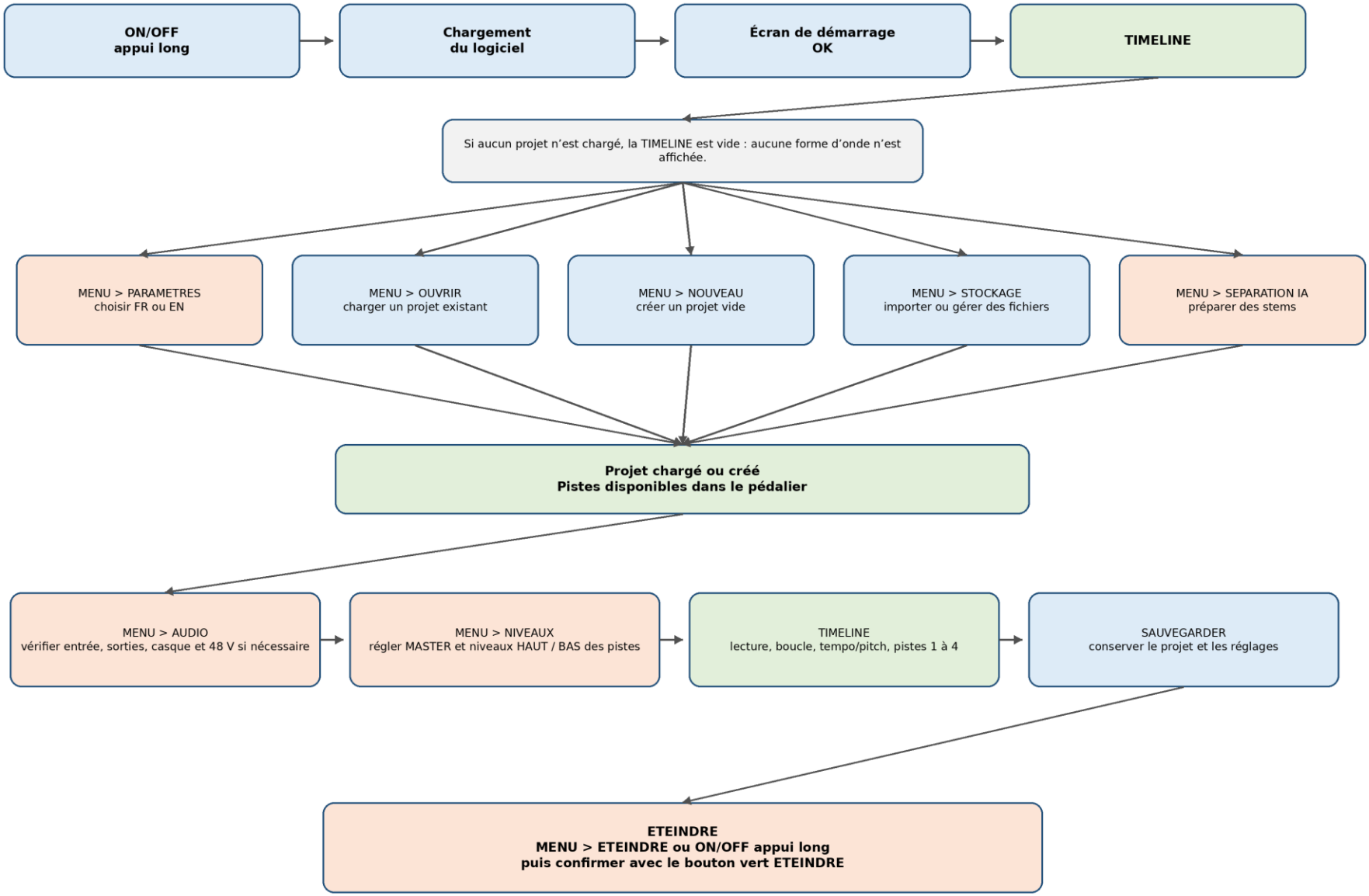
Composant	Licence
Linux kernel	GPL v2
BusyBox 1.36.1	GPL v2
eudev 3.2.14	GPL v2 / LGPL v2.1+
ALSA 1.2.12	LGPL v2.1+
X.Org Server, display drivers	MIT
Dropbear 2024.86 (SSH), DejaVu 2.37 (system fonts)	MIT / various
And: e2fsprogs, xz, parted, ca-certificates, iptables, libseccomp, zlib, OpenSSL, freetype, fontconfig, libpng, libjpeg, icu, pcre2, glib and other transitive libraries.	GPL / LGPL / MIT / BSD

Broadcom proprietary firmware: Raspberry Pi firmware (rpi-firmware, rpi-userland) is subject to the Broadcom licence. It is required for operation of the graphics processor and certain peripherals. Its redistribution is governed by the Broadcom terms.

22. Quick troubleshooting

Problem	Recommended check
No headphone sound	Check the headphones, cable, general volume, PHONES output and AUDIO menu settings.
Silent track	Check the track HIGH / LOW level, the displayed colour and LEVELS menu settings.
File not found	Re-select the file and check that the USB flash drive is still connected.
Unbalanced playback	Check MASTER, each track level and mono/stereo mode in MENU > AUDIO.
AI SEPARATION failed	Check the WAV/MP3 format, available space and restart processing with a healthy source file.
48 V-related issue	Immediately deactivate 48 V if the connected device is not a compatible condenser microphone.
Lost changes	Save regularly. The device displays a reminder message before MENU > NEW or MENU > OPEN if the project has been modified.
Line input too weak or saturated	Check gain, input attenuation and mono/stereo mode in MENU > AUDIO.
Incorrect language	Open MENU > SETTINGS, choose French or English, then confirm.
Mixing impossible	Check that at least two distinct files are selected and that the number of files does not exceed four.

Organigramme des opérations de base



Lecture conseillée : démarrer, charger ou créer un projet, vérifier les niveaux, travailler, sauvegarder, puis éteindre proprement.