



DRUMBOY

PRO EDITION

USER MANUAL v1.1

Welcome

to the noisy world of Randomwaves

At Randomwaves,
we believe the best instruments
are the ones **you bring to life.**

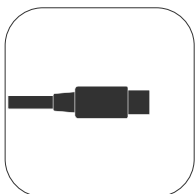
Drumboy Pro
is made to be built,
tweaked, and **truly yours.**



<https://github.com/Randomwaves>



<https://discord.gg/5atevNH6UU>



Cable Compatibility

Drumboy Pro is powered via a USB-C port and supports standard USB-C to USB-C cables.



Power Source

We recommend always powering Drumboy Pro via an independent power bank instead of a wall adapter. This eliminates active-ground noise when connecting to mixers or sound cards.



Headphones First

For the best audio experience, plug in your headphones before connecting USB power — this helps ensure smooth performance with all headphone types.

CONNECTION GUIDE

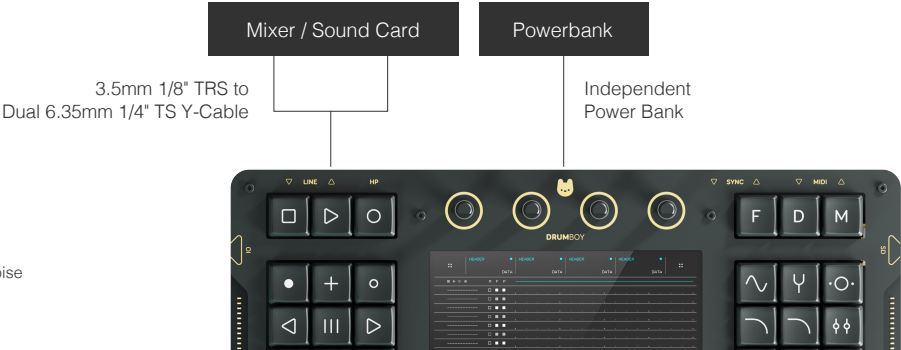


You can connect Drumboy Pro to your headphones or external studio gear using the recommended setups below to ensure optimal, noise-free performance.

HP Connection



Mixer Connection



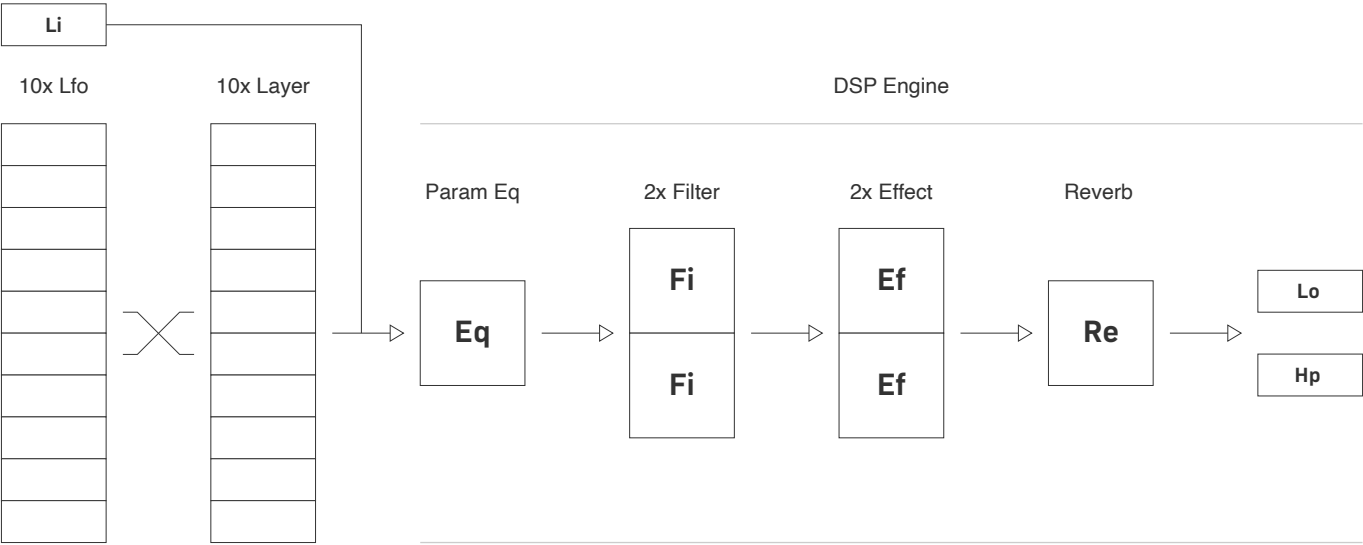
If you experience any ground-loop noise when connecting to studio gear, a passive DI-box* can be used.

*Behringer DI-400, DI-600 or ART dPDB

SOUND ARCHITECTURE



Drumboy Pro sound engine features a versatile architecture that combines 10 internal layers with an External Line Input (Li). While the internal layers are shaped by 10x LFO matrix, both sources are summed and processed through a high-performance DSP Engine. This serial chain includes a Parametric EQ, dual Filters, and dual Effect modules, followed by a dedicated Reverb stage. The final signal is routed to both Line (Lo) and Headphone (Hp) outputs.



CHARGE PAD



ChargePad is a detachable, rechargeable power dongle that serves as the primary power source for your Drumboy Pro. It delivers up to 4 hours of continuous playtime on a single charge.

The module features a male USB-C connector that plugs directly into the DrumboyPro, and a female USB-C port for recharging the battery. A power switch on the top-left corner turns the module on or off. Four integrated LEDs provide real-time status updates on battery life and device operation.

Led A		Fully Charged
Led B		Charging
Led C		Low Battery (steady)
		Flat Battery (blink)
Led D		Power



QUICK START GUIDE



1. **Insert** the Drumboy Pro SD-Card

2. **Plug in** the Headphones

3. **Connect** to Power Supply

(connect to either the ChargePad or a power source via Usb-C cable)



4. **Power on** the Device



5. **Access** the File Menu

Once the device is on, locate and press the **[F]** key to open the File menu.

6. **Load** the File Menu

Navigate to the **Load** tab, select the file named File_001 and open it with **[O]** key .

QUICK START GUIDE



7. Reset | Play | Record

On the top left of Drumboy, you have the keys to control the song play.



4. M | F | P Keys

You can adjust layer playback settings by pressing **[Layer] key** while holding down the **[M]** (mute), **[F]** (fill), and **[P]** (playmode) keys.



5. Start Finger Drummngig

You can start generating beats by using the **[Layer] keys**.

In&Out Interface Menu Knob



MENU ARCHITECTURE



Drumboy Pro menu architecture is designed for better workflow efficiency, being divided into two main operational areas:



GLOBAL MENU

A fully customizable workspace where you can assign your most-frequently used functions for quick access.



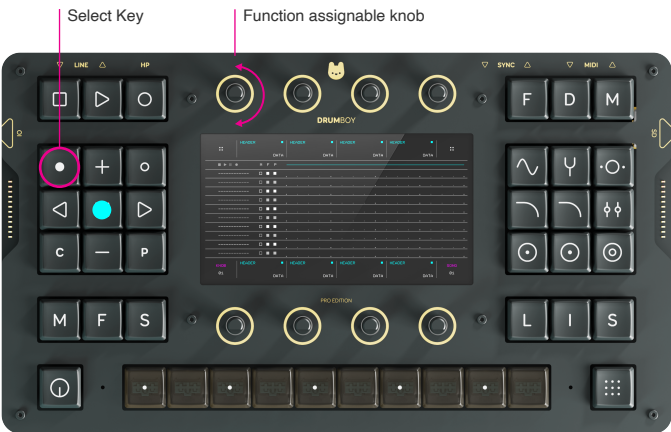
DEDICATED MENUS

Function-specific menus (e.g., Effect, Filter) with fixed parameters for precise sound shaping.

KNOB CONTROL



Drumboy Pro features a macro control system with 8 assignable knobs, offering dual-mode functionality depending on the active menu.



Hold **[Select]** and turn the knob to map a parameter

GLOBAL MENU

In the Global Menu, knobs control user-defined functions. The device provides 5 knob banks, allowing for a total of 40 assignable functions.



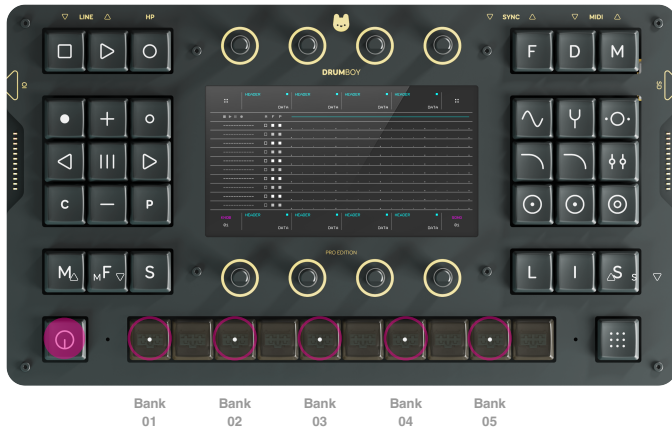
DEDICATED MENUS

In all other menus, knobs control specific on-screen parameters. In these modes, knob functions are fixed and cannot be reassigned.

KNOB CONTROL



The **Global Menu** offers 5 independent knob banks, allowing you to map up to 40 different parameters across the device—perfect for assigning your most frequently used functions for instant access.



Bank Select

To activate a specific knob bank, press the desired [Layer 1-10] key while holding down the [Knob Bank] key.



Fast Mode / Slow Mode

Hold the **[F]** key while turning a knob to engage Fast Mode, which doubles the value change rate for rapid adjustments.

Hold the **[S]** key while turning a knob to engage Slow Mode, which halves the value change rate for precise adjustments.

File Drumkit Mixer

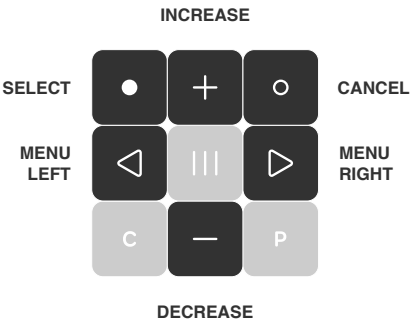
FILE MENU



You can reset, load, save and delete the files you have created using the **File Menu**.
The file library consists of 100 files and is stored in the System/File folder on the SD card.

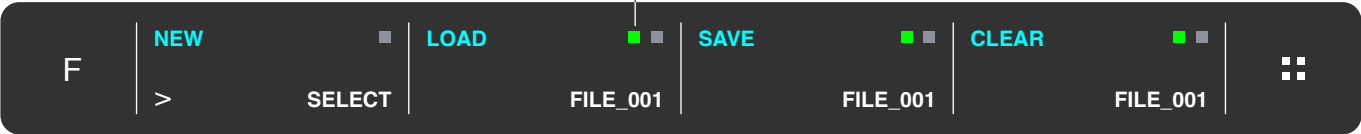


Press **[F]** key to enter the File Menu



Use the **menu buttons** to change parameters

Top Menu



Opens a new file.
(Press ● to select)

Loads the selected
file.
(Press ● to select)

Saves the current work
to the selected file.
(Press ● to select)

Clears the contents of
the selected file.
(Press ● to select)

Bottom Menu



Layer Song, Layer Instrument, Lfo, Rhythm, Eq, Filter, Effect and Reverb settings are stored in each File.

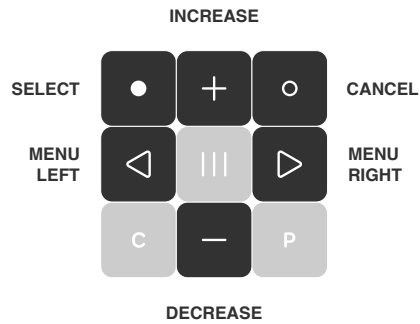
DRUMKIT MENU



You can reset, load, save and delete the drumkits you have created using the **Drumkit Menu**. The drumkit library consists of 100 drumkits and is stored in the System/Drumkit folder on the SD card.

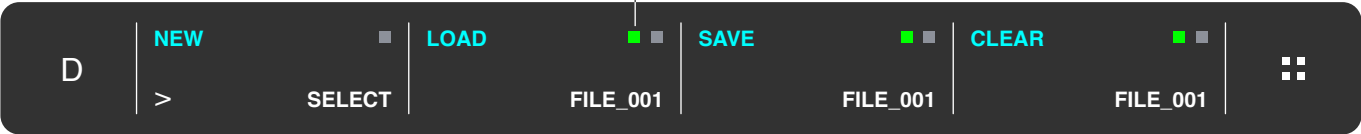


Press **[D]** key to enter the Drumkit Menu



Use the **menu buttons** to change parameters

Top Menu



- Opens a new drumkit.
(Press ● to select)
- Loads the selected drumkit.
(Press ● to select)
- Saves the current work to the selected drumkit.
(Press ● to select)
- Clears the contents of the selected drumkit.
(Press ● to select)

Bottom Menu



Layer Instrument, Lfo, Eq, Filter, Effect and **Reverb** settings are stored in each Drumkit.

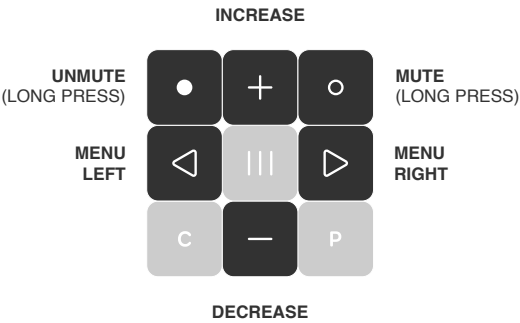
MIXER MENU



You can adjust the global, headphone, line-out, and line-in levels, set the line-in mix mode, and configure pan, limiter and normalize values using the **Mixer Menu**.



Press **[M]** key to enter the Mixer Menu



Use the **menu buttons / knobs** to change parameters

Top Menu

Press and hold **Mute/Unmute** keys to control audio channels

M

MAS-VOL

MUTE

HP-VOL

MUTE

LO-VOL

MUTE

LI-VOL

MUTE

>

%

DB

DB

DB

80

+00

+00

+00

Global volume
 $0 < x < 100$

Hphone level
 $-20\text{dB} < x < 0\text{dB}$

Line-out level
 $-20\text{dB} < x < 0\text{dB}$

Line-in level
 $-20\text{dB} < x < 0\text{dB}$

Bottom Menu

LI-IN

PAN

LIMITER

NORMALIZE

LR

DB

REVERB

LR

+00

ON

Line-in mix channel

Pan level
 $L20 < x < R20$

Limiter level
 $-10\text{dB} < x < 0\text{dB}$

Enables/disables
sample normalization

Rhythm Metronome Sync

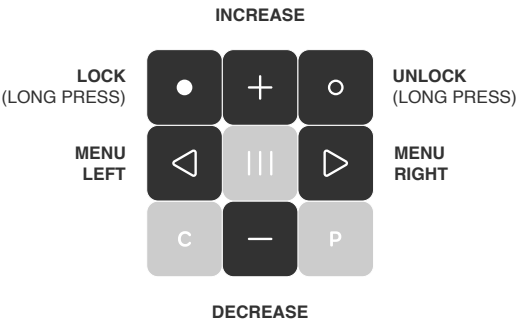
RHYTHM MENU



You can define the structural and timing elements of your song using the **Rhythm Menu**. Changing bar, measure & quantize settings, make permanent adjustments to the timing of the beats in the song and cannot be undone.



Press **[RHY]** to enter the Rhythm Menu



Use the **menu keys / knobs** to change parameters

Top Menu

R

TEMPO

120

BAR

LOCK

04

MEASURE

LOCK

04

QUANTIZE

LOCK

1/16

Tempo of the song
 $50 < x < 200$

Number of beats
in each measure
 $1 < x < 12$

Number of measures
in the song
 $1 < x < 12$

Grid value of the
quantization
 $1/64 < x < 1/1$

Bottom Menu

$\text{max}(\text{beat} \times \text{measure}) = 80$



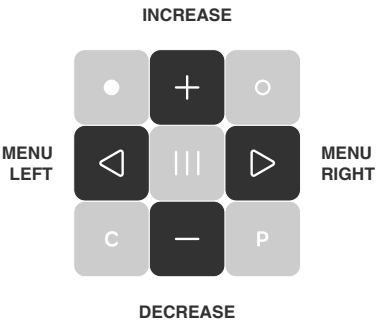
METRONOME MENU



You can activate metronome, define its precount state, sample sound and volume level using the **Metronome Menu**.



Press **[METRO]** to enter the Rhythm Menu



Use the **menu keys / knobs** to change parameters

Top Menu

M

ACTIVE

ON

PRECOUNT

ON

SAMPLE

KNOCK

VOLUME

075

Enables/disables metronome while recording

Enables/disables precount before recording

Metronome sample sound

Metronome level
 $0 < x < 100$

Bottom Menu



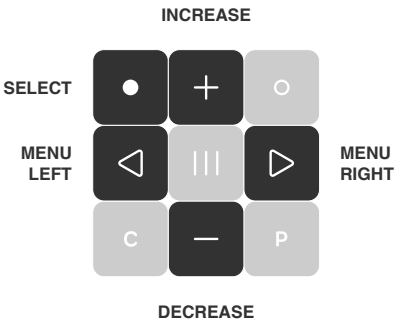
SYNC MENU



You can configure the device's connectivity properties by adjusting the sync and MIDI settings using the **Sync Menu**.

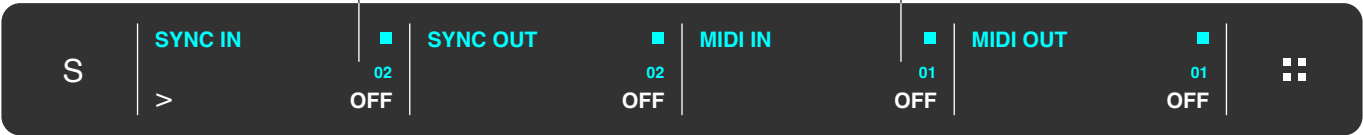


Press **[SYNC]** to enter the Rhythm Menu



Use the **menu keys / knobs** to change parameters

Top Menu



Sync In mode selection

Sync Out mode selection

Midi In mode selection

Midi Out mode selection

Bottom Menu

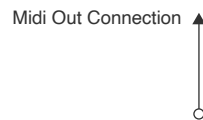


For MIDI-IN & MIDI-OUT Modes:

Note: Handles MIDI notes only.

Sync + Note: Handles both MIDI clock, commands and notes.

You can synchronize more than two devices using the aforementioned principle.



SLAVE

SYNC IN | OUT



To **synchronize** Drumboy with another device via SYNC, follow these steps:

For SYNC-IN & SYNC-OUT Modes:

Connect a mono/stereo cable to the device's SYNC port, which offers, 3 available modes for both SYNC-IN and SYNC-OUT:

MODE-A: Sends a continuous clock signal via mono output.

MODE-B: Sends continuous clock and transport (play/stop) signals via stereo output.

MODE-C: Sends a clock signal via mono output only during playback.

PPQN: Hold Select key to select the desired PPQN. (1-24)

You can synchronize more than two devices using the aforementioned principle.



Eq

Filter

Effect

Reverb

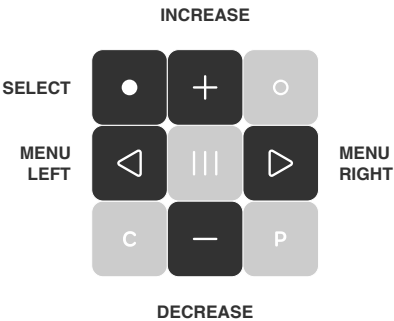
PARAMETRIC EQ MENU



You can activate parametric eq, define its filters' center frequency and gain using the **Parametric Eq Menu**.



Press **[EQ]** to enter the Parametric Eq Menu



Use the **menu keys / knobs** to change parameters

Top Menu

E

ACTIVE

Q-FACTOR

LO-SHELF

HI-SHELF

>

OFF

01

50HZ

5KHZ

+00

+00

Hold **Select** key to edit the frequency

Enables/disables
parametric eq

Quality factor of all
eq filters
 $1 < x < 8$

Center freq, gain level
of low shelving filter
 $-24 < x < 12$

Center freq, gain level
of high shelving filter
 $-24 < x < 12$

Bottom Menu

PEAK-1

PEAK-2

PEAK-3

PEAK-4

100HZ

250HZ

1KHZ

3KHZ

+00

+00

+00

+00

Center freq, gain level
of peaking filter-1
 $-24 < x < 12$

Center freq, gain level
of peaking filter-2
 $-24 < x < 12$

Center freq, gain level
of peaking filter-3
 $-24 < x < 12$

Center freq, gain level
of peaking filter-4
 $-24 < x < 12$

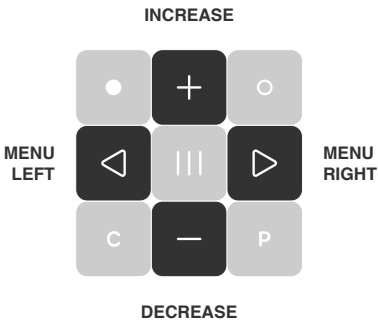
FILTER 1-2 MENU



You can activate filters, define its type, slope, center frequency, resonance, drive and dry&wet levels using the **Filter Menu**.



Press **[FIL]** to enter the Filter Menu



Use the **menu keys / knobs** to change parameters

Top Menu

F

1

ACTIVE

■

TYPE

■

SLOPE

■

FREQUENCY

■

>

OFF

HIGHPASS

DB

12

KHZ

1.0

Enables/disables
filter channel

Filter type

Filter slope
 $6 < x < 12$

Filter cutoff frequency
 $10\text{Hz} < x < 20\text{kHz}$

Bottom Menu

RESONANCE

■

DRIVE

■

DRY

■

WET

■

%

00

%

00

%

00

%

100

Filter resonance
 $0 < x < 100$

Filter drive
 $0 < x < 100$

Dry signal level
 $0 < x < 100$

Wet signal level
 $0 < x < 100$

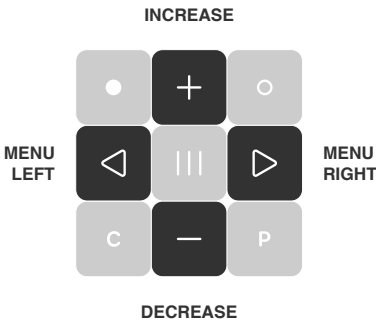
EFFECT 1-2 MENU



You can activate effects, define its type, parameters and dry&wet levels using the **Effect Menu**.



Press **[EFF]** to enter the Effect Menu



Use the **menu buttons / knobs** to change parameters

Top Menu

E

1

ACTIVE

■

TYPE

■

TIME

■

LEVEL

■

⋮

>

OFF

DELAY

1/4

50

Enables/disables
effect channel

Effect type

Effect parameter A

Effect parameter B

Bottom Menu

FEEDBACK

■

DAMPING

■

DRY

■

WET

■

%

25

%

30

%

75

%

50

Effect parameter C

Effect parameter D

Dry signal level
 $0 < x < 100$

Wet signal level
 $0 < x < 100$

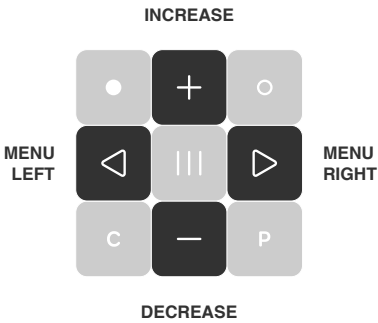
REVERB MENU



You can activate reverb, define its room size, decay level, damping level, pre-delay time, surround level and dry&wet levels using the **Reverb Menu**.



Press **[REV]** to enter the Reverb Menu



Use the **menu keys / knobs** to change parameters

Top Menu

R

ACTIVE

■

SIZE

■

DECAY

■

DAMPING

■

⋮

>

OFF

25

50

30

Enables/disables
reverb channel

Room size
 $0 < x < 100$

Decay level
 $0 < x < 100$

Damping level
 $0 < x < 100$

Bottom Menu

PREDELAY

■

SURROUND

■

DRY

■

WET

■

MS

05

25

100

50

Pre-delay time
 $0 < x < 100$

Surround level
 $0 < x < 100$

Dry signal level
 $0 < x < 100$

Wet signal level
 $0 < x < 100$

Lfo

Layer Inst

Layer Song

M F P

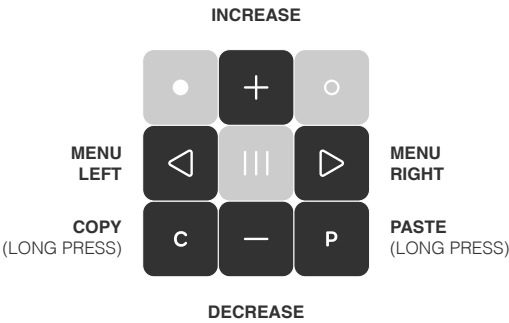
LFO MENU



Drumboy Pro features 10 global LFOs that function independently of the layers. You can activate these LFOs and configure their settings using the **LFO Menu**. To apply the modulation, you must assign the configured LFO to a target parameter within the desired layer instrument.



Hold **[L]** and press **[Layer]** to enter the LFO menu



Use the **menu keys / knobs** to change parameters

Top Menu

Hold **Copy & Paste** to duplicate LFO parameters to another slot



Enables/disables
lfo

Lfo type
(sine, tri, saw etc.)

Lfo graph

Bottom Menu



Lfo rate
 $1/8 < x < 8/1$

Lfo phase
 $0 < x < 360$

Lfo polarity
inversion

Lfo depth
 $0 < x < 100$

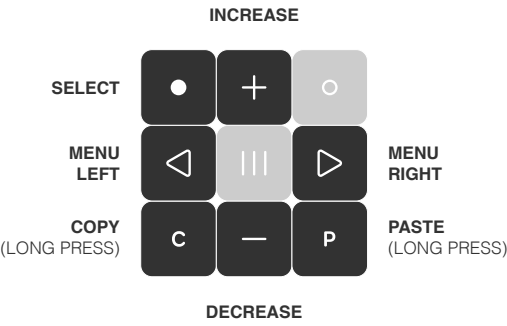
LAYER INST MENU



You can define instrument & sample type and configure its parameters and routing settings using the **Layer Inst Menu**. You can assign the desired global LFO to any of the sample's parameters.



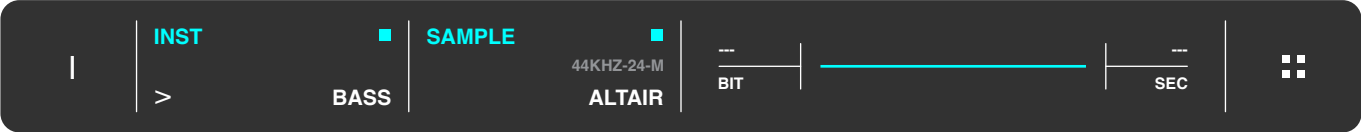
Press **[I]** + **[Layer]** to cycle through **3** Layer-Instrument Menus



Use the **menu keys / knobs** to change parameters

Top Menu

Hold **Copy & Paste** to duplicate layer parameters to another slot



Instrument type
(Press **[O]** to select)

Sample type
(Press **[O]** to select)

Sample graph

Bottom Menu 1

Hold **Select** to edit the lfo reference



Sample level
 $0 < x < 100$

Sample play pitch
 $0.50 < x < 2.00$

Sample play direction

Sample play resolution
 $4 < x < 24$

LAYER INST MENU



Bottom Menu 2

Hold **Select** to edit the lfo reference

START

00

END

100

TIMING

00

PROBABILITY

100

Sample start position
 $0 < x < 100$

Sample end position
 $0 < x < 100$

Sample play timing
 $0 < x < 100$

Sample play probability
 $0 < x < 100$

Bottom Menu 3

EQ

A
ON

FILTER

B
1+2

EFFECT

C
1+2

REVERB

D
ON

Layer eq routing

Layer filter routing

Layer effect routing

Layer reverb routing

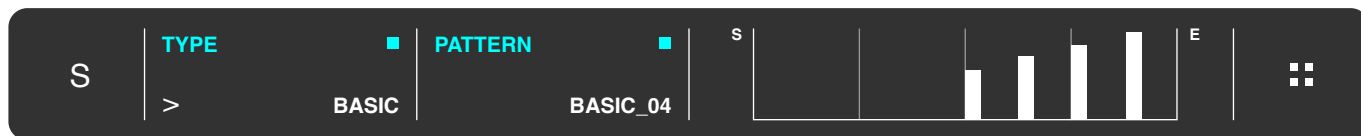
Layer --> Eq --> Filter 1 --> Filter 2 --> Effect 1 --> Effect 2 --> Reverb --> Line Out

Hold **Select** and use the **knobs or menu keys** to set LFO references.

INCREASE			
ADD (LONG / SHORT)			 CLEAR (LONG / SHORT)
MENU LEFT			 MENU RIGHT
COPY (LONG / SHORT)			 PASTE (LONG / SHORT)
DECREASE			

Top Menu

Hold **Copy & Paste** to duplicate layer song to another slot



Fill pattern of the selected beat.

Fill graph

Bottom Menu



Fill pattern timing

Fill pattern velocity

LAYER SONG MENU



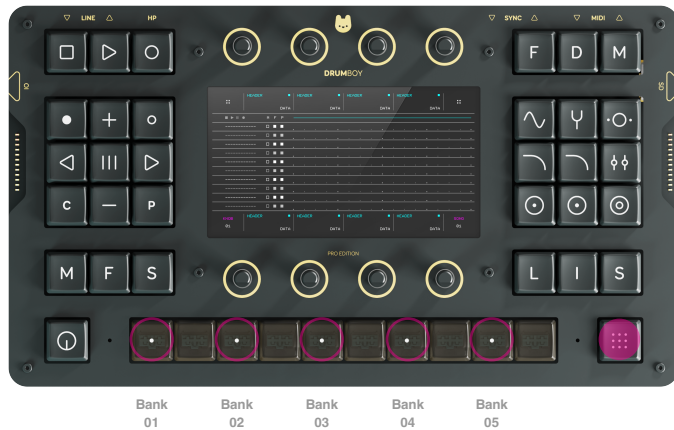
The chart below presents an in-depth overview of each key, highlighting their specific roles and functionalities in the **Layer Song Menu**.

	LEFT / RIGHT You can use the left&right keys to navigate between beats, or hold the Add key to shift them.		UP / DOWN You can select the fill type of the selected beat using the up and down keys .
	ADD Long press of the Add key adds repeated beats on empty layers. The intensity of the beats increases with the length of the key press.		COPY Short press of the Copy key copies the fill of the selected beat, long press copies the beats of the whole layer.
	CLEAR Short press of the Clear key clears the selected beat, long press clears the whole layer.		PASTE Short press of the Paste key pastes the copied fill to the selected beat, long press pastes the beats to the selected empty layer.

SONG BANK



Drumboy Pro is equipped with 5 distinct song banks for each file, allowing for flexible arrangements within a single project.



Bank Select

To activate a specific knob bank, press the desired [Layer 1-10] key while holding down the [Song Bank] key.

M | F | P KEYS



You can instantly adjust layer playback settings using the M, F, and P keys. The **M key** enables or disables the mute function, the **F key** toggles fill playback on or off, and the **P key** activates or deactivates the playmode settings (such as pitch, direction, and resolution).



Press **M | F | P keys + [Layer]**

Mute	M + Layer
Fill	F + Layer
PlayMode	P + Layer

Sd Card Firmware

SD CARD FORMAT



On your **SD Card**, you will find two primary folders: System and Sample.

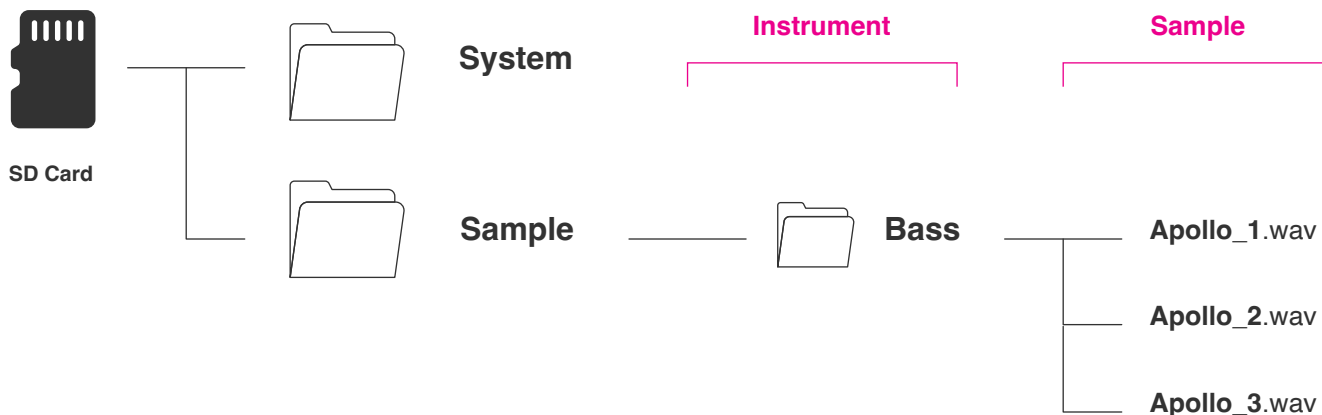
System Folder:

This folder contains all the essential files necessary for the operation of the Drumboy software. It is crucial not to delete or modify any files within this folder, as they are required for the proper functioning of your device.

Sample Folder:

Within this folder, you will see various subfolders, each categorized by different instruments. You can organize and store your desired samples (.wav, 8-32 bit, mono-stereo) within these instrument subfolders.

You can **download** all **SD Card files** from www.randomwaves.io whenever you require them.



UPDATE FIRMWARE



To update your Drumboy firmware, follow these steps:

Visit **www.randomwaves.io** website and download the latest Drumboy firmware.

Turn off your Drumboy device to ensure it is safely powered down.

Carefully **remove** the SD card from the device.

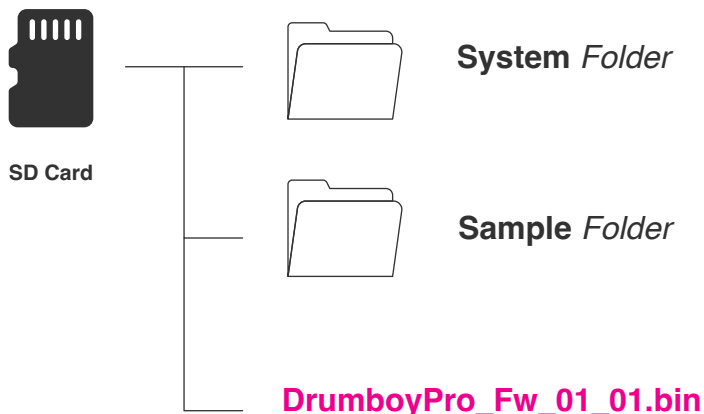
Connect the SD card to your computer, then **locate** the root directory of the SD card.

Copy the downloaded Drumboy firmware to this root directory.

Safely **eject** the SD card from your computer and **re-insert** it into your Drumboy device.

Power on your Drumboy device.

The device will automatically detect and load the new firmware.



CUSTOMIZE FIRMWARE



To customize your Drumboy Pro firmware, follow these steps:

Visit **www.randomwaves.io** website and download the latest Drumboy source code files. Install **STM32CubeIDE** to your computer and open Drumboy project folder in this software.

Wire the **SWDIO**, **GND**, and **SWCLK** pins from the DrumboyPro to the matching pins on the STLink V2. Once connected, plug the STLink V2 into your computer's USB port.

You are ready to upload your customized firmware to Drumboy.



For any questions or suggestions,
feel free to email us at hello@randomwaves.io.
Stay musical!

