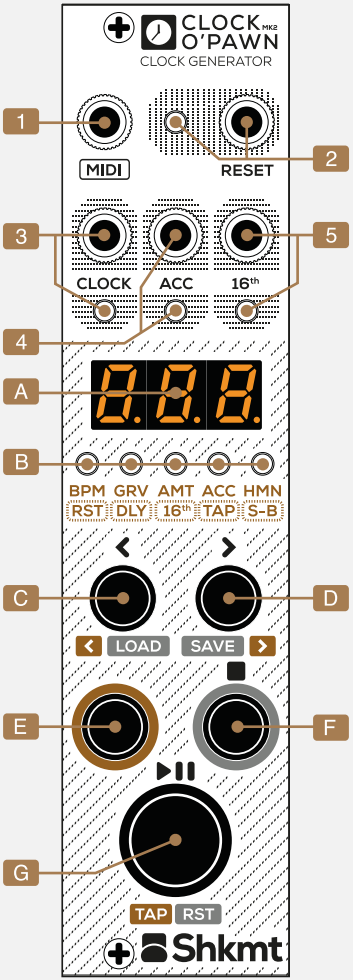
Shakmat
Clock O'Pawn MK2

- 6HP Eurorack Module
- Built & designed in E.U.
- www.shakmat.com


CLOCK MK2
O'PAWN
CLOCK GENERATOR
1
MIDI
RESET
2
3
CLOCK
ACC
16th
5
4
A
B
BPM GRV AMT ACC HMN
RST DLY 16th TAP S-B
C
D
LOAD
SAVE
E
F
G
TAP
RST
Shkmt

Introduction

The Clock O'Pawn mk2 serves as a versatile clock device, taking on the role of true "chef d'orchestre" for your modular system. Its transport section lets you start, stop, and reset instruments synchronized with its intuitive internal clock or have your setup dance with your MIDI equipment. If you find metronomic clock signals uninspiring, a variety of groove patterns and clock humanization features enable the maestro to guide your setup with distinctive shuffles and swings.

1. MIDI input
2. Reset output & activity LED
3. Clock output & activity LED
4. Accent output & activity LED
5. 16th clock output & activity LED

A. Display
B. Menu LEDs
C. Previous button
D. Next button

E. Function button 1
F. Stop
G. Play/Pause button

Installation

The Clock O'Pawn mk2 requires a standard 2x8 pin Eurorack power cable. Make sure that the red stripe on the cable aligns with the -12V side of the Clock O'Pawn mk2's power header.

Basics

The Clock O'Pawn mk2 features four outputs: the **clock output** [3] delivers a 4 ppqn clock signal, which can be grooved and humanized. The **16th output** [5] provides a straight 4 ppqn clock signal. The **accent output** [4] delivers a trigger sequence determined by an accent pattern. The **Reset output** [2] generates a trigger at start, and optionally at stop, and/or every 1, 2, or 4 bars. The Clock O'Pawn mk2 is equipped with its own internal clock source, and it can be synchronized with a MIDI device through the MIDI input [1].

Transport section

Play-Pause [G]: Press this button to start or pause the clock. If a play operation occurs after a stop, the module generates a reset trigger.

Stop [F]: Press this button to stop the clock. Optionally, a reset signal can be emitted at stop (see *Reset Options* in this manual).

Reset [F+G]: Hold the grey function button (stop) and press the reset (play-pause) button to manually generate a reset signal.

Tap Tempo [E+G]: Hold the amber function button and press the tap (play-pause) button to set the tempo by tapping the quarter note (see *Tap Tempo Options* in this manual).

BPM Nudge [C&D]: The previous and next buttons allow you to nudge the BPM when no menu page is selected. When used in combination with the function buttons [E&F], these buttons navigate the menu, change values, and enable load/save operations. Note there is no nudge when the module is clocked via MIDI.

Menu

To switch between different menu pages, hold the first function button [E] and press the previous [C] or next [D] buttons. The menu has two layers: the main menu pages (menu LED [B] is on) and the options pages (menu LEDs [B] are blinking). When no menu LED is active, the module operates in BPM nudge mode, as explained in the *Transport section* chapter.

Menu 1 BPM BPM setting & clock source

The first menu page (first menu LED [B] is on) enables you to configure the BPM and select the clock source. The tempo can be adjusted from 30 to 300 BPM. If a tempo below 30 BPM is selected, the display [A] shows 'Mid', and the tempo is determined by an external clock source via the MIDI input [1].

Menu 2 GRV Grooves

The second menu page (second menu LED [B] is on) selects a groove pattern. The first digit of the display [A] represents the time signature, while the two last digits represent the groove type. Here's the list of available grooves:

4:4 Grooves

4:4 Swing
Even pulses are delayed.

4:4 Swing inverted
Even pulses are anticipated.

4:4 Swing Alternated
Pulses 2 & 4 are delayed, with a greater delay on 4.

4:4 Ternary
Pulses 2 & 3 are on triplets when the amount is set to 100% while pulse 4 is pushed to a sextolet. The delay ratios on a group of 4 pulses are 0, 1, 2, 3.

4:4 Ternary inverted
Same as ternary but the pulses are anticipated.

4:4 Ternary reversed
Same as ternary but the delay ratios on a group of 4 pulses are 0, 3, 2, 1.

4:4 Decce Accelerando
On a 4:4 bar, the clock will slows down until the 8th clock and then accelerates during the second half of the bar.

4:4 Acce Deccelerando
On a 4:4 bar, the clock will speeds up until the 8th clock and then deccelerates during the second half of the bar.

4:4 Pattern 1 to 4
Inspired by iconic Hip-Hop grooves, these four groove patterns are best played between 70 to 100 bpm.

5:8 Grooves

5:8 Swing
Even pulses are delayed.

5:8 Swing inverted
Even pulses are anticipated.

5:8 Ternary
Pulses 2 & 3 are on triplets when amount is set to 100% while pulse 4 is pushed to a sextolet. The delay ratios on a group of 4 pluses are 0, 1, 2, 3.

5:8 Pattern based on 2-3 bar construct
The steps are divided into two groups: the first four and the next six. Then, for each group, they are gradually delayed, ranging from 0% on the first step to 75% on the last step.

3:4 Grooves

3:4 Swing
Even pulses are delayed.

3:4 Swing inverted
Even pulses are anticipated.

3:4 Ternary
Pulses 2 & 3 are on triplets when amount is set to 100% while pulse 4 is pushed to a sextolet. The delay ratios on a group of 4 pluses are 0, 1, 2, 3.

3:4 Ternary inverted
Same as ternary but pulses are anticipated.

3:4 Triplet swing
Pulses 2 & 3 are delayed.

3:4 Triplet swing inverted
Pulses 2 & 3 are anticipated.

7:8 Grooves

7:8 Swing
Even pulses are delayed.

7:8 Swing inverted
Even pulses are anticipated.

7:8 Pattern based on 2-2-3 bar construct
Steps are divided into three groups: the first four, the next four, and the last six. Then, for each group, they are gradually delayed, ranging from 0% on the first step to 75% on the last step.

7:8 Pattern based on 3-2-2 bar construct
Steps are divided into three groups: the first six, the next four, and the last four. Then, for each group, they are gradually delayed, ranging from 0% on the first step to 75% on the last step.

7:8 Pattern based on 2-3-2 bar construct
Steps are divided into three groups: the first four, the next six, and the last four. Then, for each group, they are gradually delayed, ranging from 0% on the first step to 75% on the last step.

9:8 Grooves

9:8 Swing
Even pulses are delayed.

9:8 Swing inverted
Even pulses are anticipated.

9:8 Triplet swing
Pulses 2 & 3 are delayed.

9:8 Triplet swing inverted
Pulses 2 & 3 are anticipated.

9:8 Sextuplet swing
Pulses 2, 3, 4, 5 & 6 are delayed.

9:8 Sextuplet swing inverted
Pulses 2, 3, 4, 5 & 6 are anticipated.

9:8 Pattern based on 2-2-2-3 bar construct
Steps are divided into four groups: the first four, the next four, another four, and the last six. Then, for each group, they are gradually delayed, ranging from 0% on the first step to 75% on the last step.

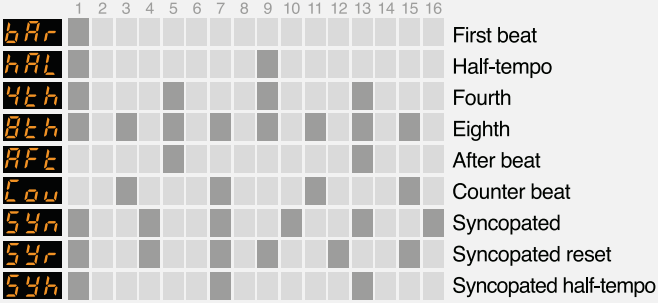
Menu 3 AMT Groove amount

The third menu page (third menu LED [B] is on) sets the amount of groove from 0 to 100%.

Menu 4 ACC Accent

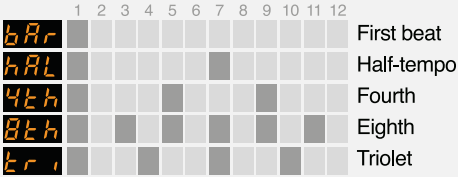
The fourth menu page (fourth menu LED [B] is on) allows you to choose the accent pattern for the accent output. Note that the available accents depend on the time signature of the selected groove. Here's the list of accents for each groove:

4:4 Bars Accents Pattern

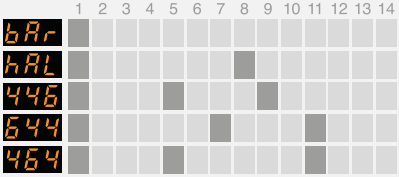


5:8 Bars Accents Pattern

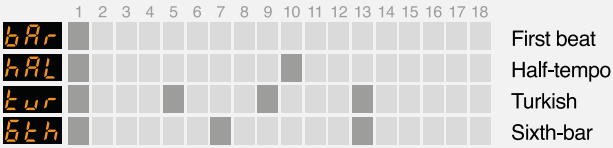
3:4 Bars Accents Pattern



7:8 Bars Accents Pattern



9:8 Bars Accents Pattern



Menu 5 HMN Humanize

The fifth menu page (fifth menu LED [B] is on) sets randomness to the timing of the clock signal, ranging from 0 to 100%. This adds a humanized feeling at lower values and a more experimental, somewhat 'drunk drummer' feeling at higher values.

Option 1 RST Reset options

Reset at play and every *x* bar

Reset at play, stop and every *x* bar

The first menu page within the second menu layer (first menu LED [B] is blinking) allows you to configure when a reset signal is generated from the reset output [2]. By default, a reset signal is produced at play if the module was stopped, but not when it is paused. However, you can emit a reset at play and every x bar or play, stop, and every x bar. Note that the bar length is determined by the selected groove type.

Option 2 DLY Delay first clock at play

The second menu page within the second menu layer (second menu LED[B] is blinking) enables you to configure the delay of the clock signal when it coincides with a reset signal. This feature ensures consistent behavior among different sequencers at reset. The delay can be adjusted within the range of 0 to 6 milliseconds.

Option 3 16th 16th clock dont stop

The third menu page within the second menu layer (third menu LED [B] is blinking) allows you to customize the behavior of the 16th clock output. This output can be set to be unaffected by the stop command (oFF is displayed) or to respond to it (oN is diplayed). This option is useful when you have components in your setup, such as clockable LFOs or syncable delays, that need to continue receiving clock signals even when the main clock is paused.

Option 4 TAP Tap tempo options

The fourth menu page within the second menu layer (fourth menu LED [B] is blinking) enables customize the Tap Tempo behavior. The display shows the number of taps needed to determine the BPM, from 2 to 8.

Option 5 S-B Select Bus

The fifth menu page within the second menu layer (fifth menu LED [B] is blinking) allows you to configure the Select Bus options. The Clock O'Pawn mk2 supports the Select Bus protocol as a receiver. With a Select Bus transmitter like the Harlequin's Context, it's possible to save or load presets. Receiving Select Bus messages can be either enabled (display shows 'rEc') or disabled (display shows 'oFF').
For more information about the Select Bus protocol, check the support section of our website.

Presets

The Clock O'Pawn mk2 has 16 slots of non-volatile memory. To save the module settings into a slot, follow these steps:

1. Hold the Stop button [F] and press the next button [D].
2. Choose a slot using the display and next/previous buttons [C&D].
3. Confirm your selection by holding the Stop button [F] and pressing the next button [D] again. You can exit the save menu without saving by pressing the Function button [E].

To load settings from a slot, follow these steps:

1. Hold the Stop button [F] and press the previous button [C].
2. Choose a slot using the display and next/previous buttons [C&D].
3. Confirm your selection by holding the Stop button [F] and pressing the previous button [C] again. You can exit the load menu without loading a slot by pressing the Function button [E].

MIDI input setting

The Clock O'Pawn mk2 is compatible with TRS MIDI cables with either of the two available standards. To select the desired standard, use the two jumpers on the back of the module. Placing them horizontally configures the module for TRS MIDI A standard, while placing them vertically sets it to TRS MIDI B.

TRS MIDI A
Jumpers are horizontal

TRS MIDI B
Jumpers are vertical

Transport section on/off

The Clock O'Pawn transport section can be disabled when the module is clocked via MIDI. To access this option, hold the Function button [E] at startup, then press the Function button [E] again to disable or enable the transport section (display shows On or Off). Press Play [G] to exit this option and go to normal operations.

Factory Reset

To perform a factory reset, hold the Previous button [C] at startup. The display shows RST, press Play [G] to confirm or Stop [F] to abort the reset process. While performing the reset, the display shows three flashing line for approximately 20 seconds.

The factory reset will clear all memory slots, then set the options for Select Bus and transport section state to factory default.

Specifications

Size	Outputs
6 HP	0 - 5V
Depth	
27 mm	
Current Draw	
55 mA @ 12V	
0 mA @ -12V	