Rhythm

Pattern Generator



Description

The Rhythm is a 4 channel pattern generator with BPM display. It ships with a multitude of genre-oriented rhythms that can be altered on a per channel basis. With each parameter under voltage control, an unlimited number of permutations are available. This unique interface removes the intricate patching necessary for crafting complex drum beats, and allows the user to focus on what matters most; composing and performing music.

- Infinite rhythmic variation
- Clock divider, random gates, and other utility modes accessible
- Intuitive performance interface
- BPM display
- Internal / External clocking capabilities with assignable PPQN settings

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Installation

To install, locate 28 HP of space in your Eurorack case and confirm the positive 12 volts and negative 12 volts sides of the power distribution lines. Plug the connector into the power distribution board of your case, keeping in mind that the red band corresponds to negative 12 volts. In most systems the negative 12 volt supply line is at the bottom. The power cable should be connected to the Rhythm with the red band facing the bottom of the module.

Specifications

Format: 28 HP Eurorack module

Depth: 23mm (Skiff friendly)

Power Consumption: +12V = 186mA, -12V = 0mA


1
clock in
2
bank
3
reset
Rhythm
9
120
4
play
5
pattern
6
clock
8
A
B
C
D
11
7
bank
10
12
pattern
13
out 1
out 2
out 3
out 4
15
variation
variation
variation
16
14
mute
mute
mute
mute
QU-BIT

General Functions Overview

1. Clock Input:
External Clock Input

Inserting a clock signal to *clock in* will externally clock the Rhythm

The number of pulses per quarter note for *clock in* can be set to 1, 4, 8, or 24
The default setting is 1 Pulse Per Quarter Note (PPQN)
(See **Setting Pulses Per Quarter Note (PPQN)** for more information)

2. Bank Control Voltage Input:
Unipolar positive control voltage input for *bank*

Range: 0V – 5V

3. Reset Button:
Button that, when pressed, will move the playback position to the beginning of the pattern

4. Play Button:
Button that, when pressed, will either play or pause the recorded pattern based on the current state

The *tempo display* will read *PSE* when the pattern is paused

Note:
When the *play button* is pressed, play/pause and mute states are written to non-volatile memory and will save in between power cycles

5. Pattern Control Voltage Input:
Unipolar positive control voltage input for *pattern*

Range: 0V – 5V

6. Clock Output:
Tempo output

The number of pulses per quarter note for *clock out* can be set to 1, 4, 8, or 24
The default setting is 1 Pulse Per Quarter Note (PPQN)
(See **Setting Pulses Per Quarter Note (PPQN)** for more information)

7. Bank Knob:
Determines the currently selected bank

If the knob is far left, bank will be set to *bank A*
If the knob is far right, bank will be set to *bank D*

8. Bank Indicator:
Indication of the currently selected bank

9. Tempo Display:
Indication of the currently selected tempo expressed in beats per minute

10. Tempo Knob:
Sets the tempo of the internal clock

If the knob is far left, the tempo will be as slow as possible
If the knob is far right, the tempo will be as fast as possible

11. Pattern Indicator:
Indication of the currently selected pattern

12. Pattern Knob:
Determines the currently selected pattern within the currently selected bank

If the knob is far left, pattern 1 will be selected
If the knob is far right, pattern 12 will be selected

13. Variation Knob:
Knob that, when turned from left to right, will add idiomatic embellishments to the corresponding trigger output based on the currently selected bank and pattern

The last three knob settings will output 1/8 notes, 1/16 notes, and 1/32 notes respectively on every pattern (excluding the patterns in *bank D*)
(See **Rhythms and Explanations** for more information on the *bank D* functionality)

14. Variation Control Voltage Input:
Unipolar positive control voltage input for *variation*

Range: 0V – 5V

15. Trigger Output
Individual trigger output for channel 1

16. Mute Button
Button that, when pressed, will stop the pattern from outputting on the corresponding channel

Controls 13-16 are replicated on channels 2-4

Setting Pulses Per Quarter Note (PPQN)

To set the pulses per quarter note (PPQN) for *clock in* and *clock out*, hold the *reset button* for 3 seconds until the *tempo display* reads *PPN*.

When in this mode, moving the *bank knob* from left to right will set the pulses per quarter note value for *clock in* to 1, 4, 8, or 24 PPQN.

If 1 PPQN is selected, *bank A* will be illuminated.
If 4 PPQN is selected, *bank B* will be illuminated.
If 8 PPQN is selected, *bank C* will be illuminated.
If 24 PPQN is selected, *bank D* will be illuminated.

When in this mode, moving the *pattern knob* from left to right will set the pulses per quarter note value for *clock out* to 1, 4, 8, or 24 PPQN.

If 1 PPQN is selected, *pattern 1* will be illuminated.
If 4 PPQN is selected, *pattern 4* will be illuminated.
If 8 PPQN is selected, *pattern 7* will be illuminated.
If 24 PPQN is selected, *pattern 10* will be illuminated.

Once the desired pulses per quarter note values have been set, press the *reset button* to exit this mode and return to the normal functionality.

Setting Pulse Length

To set the global pulse length for the *trigger outputs*, hold the *reset button* for 3 seconds until the *tempo display* reads *PPN*.

When in this mode, the *play button* will set the pulse length.
If the *play button* is illuminated, the pulse length is set to 5ms trigger signals.
If the *play button* is unilluminated, the pulse length is set to 30ms gate signals.

Once the desired pulse length has been set, press the *reset button* to exit this mode and return to normal functionality.

Note:
Upon leaving this mode, PPQN value and pulse length are written to non-volatile memory and will save in between power cycles.

Bank A:

1. House
2. Moombahton
3. Swing House
4. Pop 1
5. Funk
6. IDM 1
7. Amen Break
8. IDM 2
9. IDM 3
10. IDM 4
11. Breakdown
12. Pop 2

Bank B:

1. Hip Hop 1
2. R&B 1
3. Hip Hop 2
4. Hip Hop 3
5. Hip Hop 4
6. Hip Hop 5
7. Neo Soul
8. R&B 2
9. Break
10. 6/8 Groove
11. Triplet Groove

12. Hip Hop 6

Bank C:

1. African 1: Liberte

2. African 2: Baga Gine

3. African 3: Kassa Ni Soro

4. Latin 1: Salsa

5. Latin 2: Bossa Nova

6. Latin 3: Rhumba Clave

7. Bulgarian 1: Paidushko Horo

8. Bulgarian 2: Lesnoto

9. Bulgarian 3: Gankino Horo

10. Indian 1

11. Indian 2

12. Reggae

Bank D:

1. Ascending Sequential Gates:
Moving the variation knobs from left to right will output 1/4 notes, 1/8 notes, 1/8 note triplets, 1/16 notes, and 1/32 notes respectively on every channel.

2. Descending Sequential Gates:
Moving the variation knobs from left to right will output 1/4 notes, 1/8 notes, 1/8 note triplets,1/16 notes, and 1/32 notes respectively on every channel.

3. Pendulum Sequential Gates:
Moving the variation knobs from left to right will output 1/4 notes, 1/8 notes, 1/8 note triplets,1/16 notes, and 1/32 notes respectively on every channel.

4. Chord Comping:
This mode has the same behavior as all patterns of the other 3 banks.

5. Binary Counter:
Moving the variation knobs from left to right will output 1/4 notes, 1/8 notes, 1/8 note triplets, 1/16 notes, and 1/32 notes respectively on every channel

6. Clock Divider / Multiplier:
If the knob is center, the clock signal will be unaffected and will output 1/4 notes.
If the knob is far left, the clock signal will be divided by 32
If the knob is far right, the clock signal will be multiplied by 16

Division / Multiplication Range:
/32, /16, /8, /6, /4, /3, /2, =, *2, *3, *4, *6, *8, *16

7. Blues:
This mode has the same behavior as all patterns of the other 3 banks.

8. Jazz:
This mode has the same behavior as all patterns of the other 3 banks.

9. 5/4:
This mode has the same behavior as all patterns of the other 3 banks.

10. Random Gates:
Moving the variation knobs from left to right will increase the probability of the random gates on every channel respectively.

11. Musically Derived Random Gates:
Moving the variation knobs from left to right will increase the range of possible note values of the musically derived random gates.
If the knob is far left, 1/2 notes and 1/4 notes will be accessible.
If the knob is far right, 1/2 notes, 1/4 notes, 1/8 notes, 1/8 note triplets, 1/16 notes, 1/16 note triplets, 1/32 notes, and 1/64 notes will be accessible.

12. Random Individual Gates:
Moving the variation knobs from left to right will add 1/8 note, 1/8 note triplet, 1/16 note, and 1/32 note ratcheting to the random gates.