Octone

Pitch and Gate Sequencer

QU-BIT ELECTRONIX

Description

Octone is a sequencer designed with the creation of music in mind.
Tonality, rhythm, and rests are all built into this powerful module.

The pitch output can be quantized to one of the pre-defined scales or unquantized, allowing for the creation of microtonal melodies. Scales are easily selected via a button and will save between power cycles; no more menu diving or edit functions needed! Analog portamento can also be applied to the pitch output, providing a smooth glide between notes.

In addition to the extensive control of pitch, gate programming has never been easier. Each step of the sequencer has an associated gate out which can be used for effect throws or timbre modulations for each note in your melody. There is also a customizable global gate out, allowing for the inclusion of rests and repeats to your sequence.

With the combination of powerful pitch and gate controls, the Octone is the ideal sequencer for crafting tonal melodies with intricate rhythmic patterns.

Made by Qu-Bit in Portland, OR

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Installation

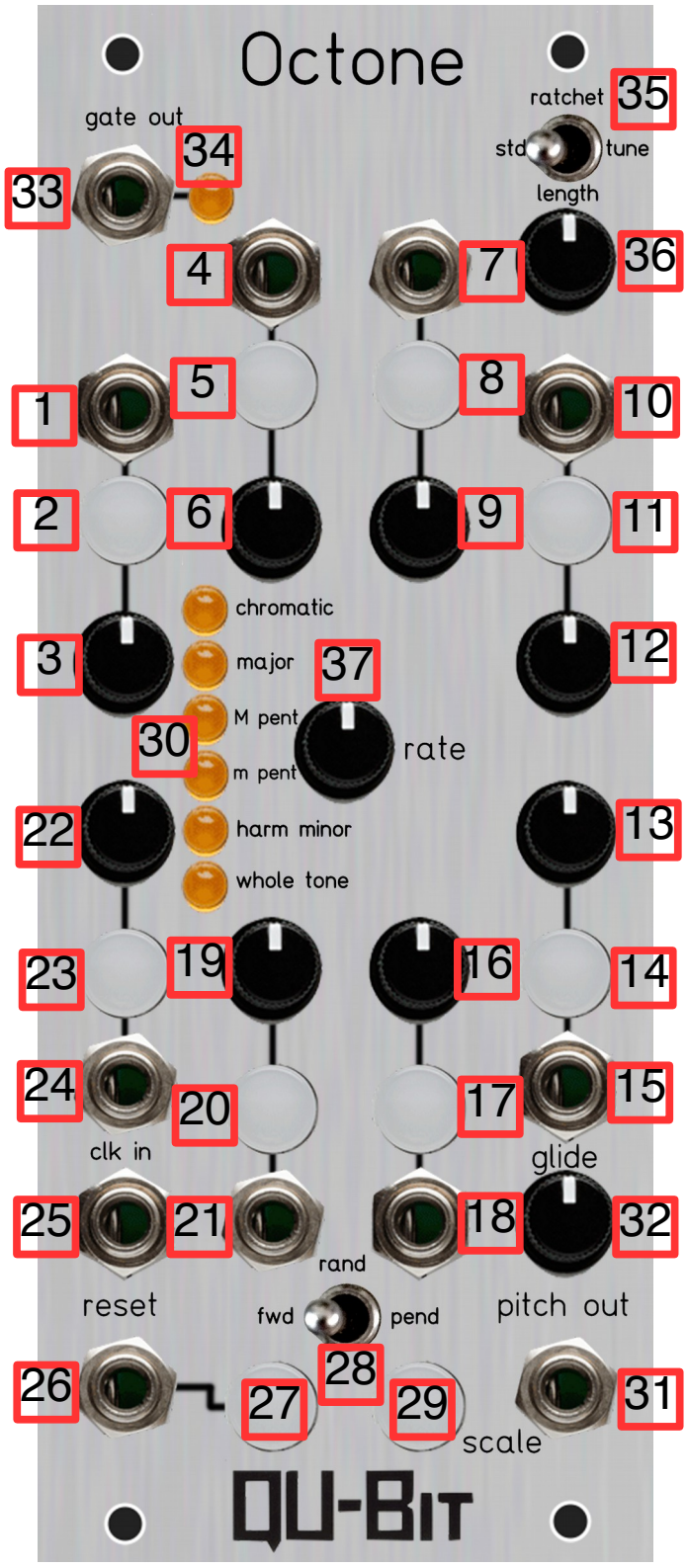
To install, locate 10 HP of space in your Eurorack case and confirm the positive 12 volts and negative 12 volts sides of the power distribution lines. Plug the connector into the power distribution board of your case, keeping in mind that the red band corresponds to negative 12 volts. In most systems the negative 12 volt supply line is at the bottom. The power cable should be connected to the Octone with the red band facing the bottom of the module.

Specifications

Format: 10 HP Eurorack module

Depth: 40mm (Skiff Friendly)

Max Current: +12V = 141mA
-12V = 55mA


Octone
gate out
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tune
length
chromatic
major
M pent
m pent
harm minor
whole tone
rate
clk in
glide
rand
fwd
pend
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General Functions Overview

1. Step One Gate Out:
Individual gate output for step one.
Gates are 0V-10V.

2. Step One Gate Enable Button:
Button that, when pressed, will enable or disable step one's gate output from the summed *gate out.* If the button is illuminated, a gate will output from *gate out* for step one. If the button is unilluminated, a gate will not output from *gate out* for step one. A gate will always output from the individual gate out, regardless of the button state.

3. Step One Pitch Control:
Pitch control for step one.
Range is 5 octaves.

4. Step Two Gate Out:
Individual gate output for step two.
Gates are 0V-10V.

5. Step Two Gate Enable Button:
Button that, when pressed, will enable or disable step two's gate output from the summed *gate out.* If the button is illuminated, a gate will output from *gate out* for step two. If the button is unilluminated, a gate will not output from *gate out* for step two. A gate will always output from the individual gate out, regardless of the button state.

6. Step Two Pitch Control:
Pitch control for step two.
Range is 5 octaves.

7. Step Three Gate Out:
Individual gate output for step three.
Gates are 0V-10V.

8. Step Three Gate Enable Button:
Button that, when pressed, will enable or disable step three's gate output from the summed *gate out.* If the button is illuminated, a gate will output from *gate out* for step three. If the button is unilluminated, a gate will not output from *gate out* for step three. A gate will always output from the individual gate out, regardless of the button state.

9. Step Three Pitch Control:
Pitch control for step three.
Range is 5 octaves.

10. Step Four Gate Out:
Individual gate output for step four.
Gates are 0V-10V.

11. Step Four Gate Enable Button:
Button that, when pressed, will enable or disable step four's gate output from the summed *gate out.* If the button is illuminated, a gate will output from *gate out* for step four. If the button is unilluminated, a gate will not output from *gate out* for step four. A gate will always output from the individual gate out, regardless of the button state.

12. Step Four Pitch Control:
Pitch control for step four.
Range is 5 octaves.

13. Step Five Pitch Control:
Pitch control for step five.
Range is 5 octaves.

14. Step Five Gate Enable Button:
Button that, when pressed, will enable or disable step five's gate output from the summed *gate out.* If the button is illuminated, a gate will output from *gate out* for step five. If the button is unilluminated, a gate will not output from *gate out* for step five. A gate will always output from the individual gate out, regardless of the button state.

15. Step Five Gate Out:
Individual gate output for step five.
Gates are 0V-10V.

16. Step Six Pitch Control:
Pitch control for step six.
Range is 5 octaves.

17. Step Six Gate Enable Button:
Button that, when pressed, will enable or disable step six's gate output from the summed *gate out.* If the button is illuminated, a gate will output from *gate out* for step six. If the button is unilluminated, a gate will not output from *gate out* for step six. A gate will always output from the individual gate out, regardless of the button state.

18. Step Six Gate Out:
Individual gate output for step six.
Gates are 0V-10V.

19. Step Seven Pitch Control:
Pitch control for step seven.
Range is 5 octaves.

20. Step Seven Gate Enable Button:
Button that, when pressed, will enable or disable step seven's gate output from the summed *gate out.* If the button is illuminated, a gate will output from *gate out* for step seven. If the button is unilluminated, a gate will not output from *gate out* for step seven. A gate will always output from the individual gate out, regardless of the button state.

21. Step Seven Gate Out:
Individual gate output for step seven.
Gates are 0V-10V.

22. Step Eight Pitch Control:
Pitch control for step eight.
Range is 5 octaves.

23. Step Eight Gate Enable Button:
Button that, when pressed, will enable or disable step eight's gate output from the summed *gate out.* If the button is illuminated, a gate will output from *gate out* for step eight. If the button is unilluminated, a gate will not output from *gate out* for step eight. A gate will always output from the individual gate out, regardless of the button state.

24. Step Eight Gate Out:
Individual gate output for step eight.
Gates are 0V-10V.

25. Clk In:
External clock input.
Threshold is 2.5V

26. Reset Gate In:
Gate input for *reset*.
Threshold is 2.5V

27. Reset Button:
Button that, when pressed, will move the Octone's step position to step one.
In tune mode, pressing the *reset button* will emit a gate from the *gate output*, allowing the user to accurately tune notes when filters and VCAs are included in the audio path.

28. Sequence Mode Toggle:
Toggle that sets the mode of the sequence.
If the toggle is left, then the sequence mode will be set to forward (*fwd*).
If the toggle is center, then the sequence mode will be set to random (*rnd*).
If the toggle is right, then the sequence mode will be set to pendulum (*pend*).

29. Scale Selection Button:
Button that, when pressed, will advance to the next preset scale.

30. Scale Selection Indicator:
If the first LED is illuminated, then the scale is set to Chromatic.
If the second LED is illuminated, then the scale is set to Major (Ionian).
If the third LED is illuminated, then the scale is set to Major Pentatonic.
If the fourth LED is illuminated, then the scale is set to Minor Pentatonic.
If the fifth LED is illuminated, then the scale is set to Harmonic Minor.
If the sixth LED is illuminated, then the scale is set to Whole Tone.
If all LEDs are unilluminated, then the scale is set to unquantized.

31: Pitch Out:
Pitch output. It can be quantized or unquantized based on the selected preset scale.
Range is 0V—5V.

32. Glide:
Sets transition time between successive pitch values from *pitch out*.

33. Gate Out:
If the current step's gate enable button is illuminated, a gate will emit from this output.
Gates are 0V-10V.

34. Gate Out LED:
LED indication for *gate out.*
It will also indicate the pulse width of the gates when externally clocked.

35. Mode Toggle:
Toggle that switches the Octone's mode.
If the mode toggle is left, then the Octone is set to Standard mode (*std*).
Standard mode behaves as a traditional eight step sequencer.

If the mode toggle is center, then the Octone is set to Ratchet mode (*ratchet*).
In ratcheting mode, the number of gates and length of each step can be adjusted. Up to eight ratchets can be assigned in single Octone operation, and 16 when chained.

If the mode toggle is right, then the Octone is set to Tune mode (*tune*).
Tune mode will stop the internal or external clock and allow the user to pause on individual steps for accurate pitch tuning. This is also the mode used for enabling and assigning ratchets (See **Enabling and Assigning Ratchets For Individual Steps** for more information).

36. Length:
Sequence length control.
If the knob is far left, the first step will be the only step included in the sequence.
If the knob is far right, all eight steps will be included in the sequence.

37. Rate:
Internal clock rate control.
If the knob is far left, then the sequence will play as slow as possible.
If the knob is far right, then the sequence will play as fast as possible.
When externally clocked, *rate* becomes the pulse width control for *gate out.*
If the knob is far left, pulse width will be as wide as possible.
If the knob is far right, pulse width will be as narrow as possible.

Enabling and Assigning Ratchets For Individual Steps

1. Set the *mode toggle* to Tune mode.

2. Double tap the *step gate enable button* for any step where ratcheting is desired.
- The *scale selection button* will illuminate for a long pulse when ratchets have been enabled for the desired step.
- The *scale selection button* will illuminate for a short pulse when ratchets have been disabled for the desired step.

3. Press and hold the *reset button* to see how many ratchets are assigned to each step.
- This process will show the amount of ratchets assigned to the step that is currently selected.
- To see the amount of ratchets assigned to other steps, press and hold the *reset button* and then press the *step gate enable button* for the desired step.
- On first bootup, two ratchets are assigned to the first four steps and four ratchets are assigned to the last four steps.

4. After the desired step has been selected and with the *reset button* held down, move the *length* knob to change the amount of ratchets assigned to the selected step.

5. Set the *mode toggle* to Ratchet mode. The Octone will now ratchet for the configured number of times on each step.

Note: If the amount of ratchets has been assigned, but ratchets have been disabled, each step will play and hold for the amount of time set by the number of ratchets, but will only output the initial gate from *gate out.*

Note: The Octone will save all settings in between power cycles.

Holding Notes

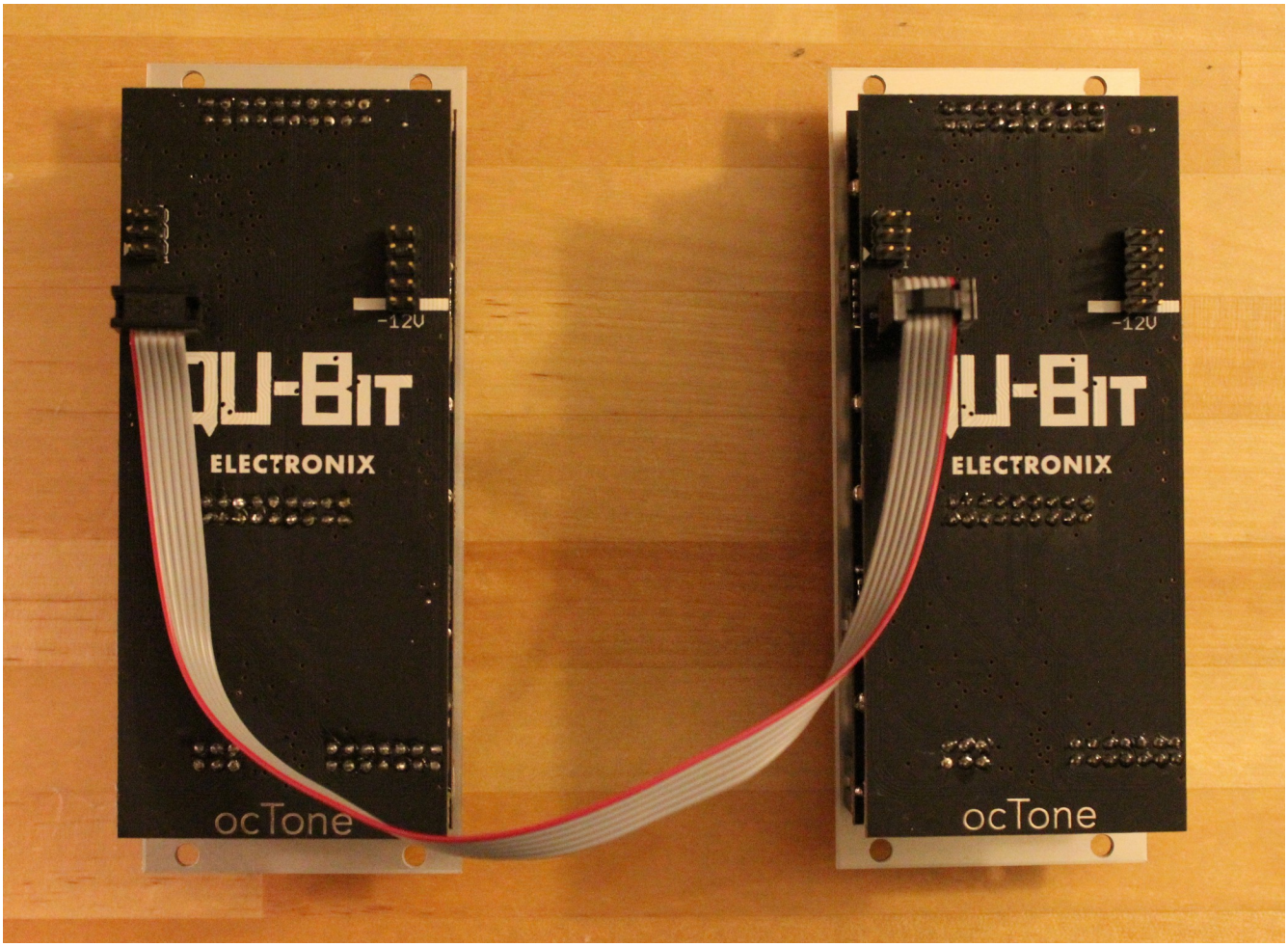
Double tapping the *step gate enable button* of any step will make the Octone hold on that step for as long as the button is held down. Gates will still output from *gate out* at the rate of the internal or external clock. The desired step's gate must be enabled for this to function

This process also works in Ratchet mode, but ratchets must be enabled for the desired step.

Chaining Two Octones – 16 Step Duophonic Sequencer

Two Octones can be chained together to create a 16 step duophonic sequencer via a 6 pin ribbon cable. The red stripe of the ribbon cable on the secondary Octone must be on the opposing side of the red stripe on the primary Octone. **A factory reset must be performed once the two Octones have been connected.** (See **Factory Reset** for more information).

Secondary **Primary**



Primary

Secondary

Pitch out on the primary Octone will always output the current knob states.
Pitch out on the secondary Octone can output the current knob states, transposed knob states, or stored sequence patterns.

1. Pitch Out:
Pitch output for secondary Octone. It can be quantized or unquantized based on the selected preset scale. It can output the current knob states, transposed knob states, or stored sequence patterns.
Range is 0V—5V.

2. Stored Pattern Bank Toggle:
Toggle that switches the mode of *pitch out* on the secondary Octone.

If the toggle is left, the secondary Octone's *pitch out* will generate its voltage from the current pot positions according to the *transpose toggle*.

If the toggle is center, the secondary Octone's *pitch out* will generate its voltage from the currently selected sequence pattern in bank 1. (See **Storing Sequence Patterns with Two Octones** for more information).

If the toggle is right, the secondary Octone's *pitch out* will generate its voltage from the currently selected sequence pattern in bank 2. (See **Storing Sequence Patterns with Two Octones** for more information).

3. Transposition Toggle:
Toggle that switches between transpose settings.

If the toggle is left, the secondary Octone will be set to transpose diatonically based on the primary Octone.

If the toggle is center, the secondary Octone will not transpose.

If the toggle is right, the secondary Octone will be set to unquantized transposition.

4. Transposition Amount:
Transposition amount for the secondary Octone.

5. Gate Out:
Gate output that will output the sum of all enabled gates.

If the primary Octone is in Standard mode, the secondary Octone's *gate out* will mirror the primary Octone's *gate out*.

If the primary Octone is in Ratchet mode, the secondary Octone's *gate out* will output bursts determined by the amount of ratchets assigned to the corresponding step.
Gates are 0V-10V.

6. Gate Out LED:
LED indication for *gate out*.

7. Pulse Width / Burst Rate:
When the primary Octone is set to Standard mode, this is the secondary Octone's pulse width control.
If the knob is far left, pulse width will be as wide as possible.
If the knob is far right, pulse width will be as narrow as possible.

When the primary Octone is set to Ratchet mode, this is the secondary Octone's burst rate control.
If the knob if far left, bursts will be as slow as possible.
If the knob if far right, the bursts will be as fast as possible.

8. Scale Selection Button:
Button that, when pressed, will advance to the next preset scale. The scale selected on the secondary Octone will only affect its own *pitch out*.

9. Scale Selection Indicator:
If the first LED is illuminated, then the scale is set to Chromatic.
If the second LED is illuminated, then the scale is set to Major (Ionian).
If the third LED is illuminated, then the scale is set to Major Pentatonic.
If the fourth LED is illuminated, then the scale is set to Minor Pentatonic.
If the fifth LED is illuminated, then the scale is set to Harmonic Minor.
If the sixth LED is illuminated, then the scale is set to Whole Tone.
If all LEDs are unilluminated, then the scale is set to unquantized.

10. Active Slot Button:
Button that, when pressed, will show the active slot of stored sequence patterns.

11. Next Slot Gate In:
Gate input for *next slot.* The secondary Octone will advance to the next stored sequence pattern once a gate is received.

12. Previous Slot Gate In:
Gate input for *previous slot.* The secondary Octone will advance to the previously stored sequence pattern once a gate is received.

Storing Sequence Patterns with Two Octones

1. Set the *stored pattern bank toggle* to the left and the *transposition toggle* to the middle.

2. Tune the desired sequence while monitoring the *pitch out* from the secondary Octone.

3. Once the desired sequence has been set, set the *stored pattern bank toggle* to center (bank 1) or right (bank 2).

4. Each *step gate enable button* is a memory location for storing sequence patterns. There are 16 locations in bank 1 and 16 locations in bank 2, equaling a total of 32 stored sequence patterns.

5. Press and hold the *active slot button* and then press and hold the desired memory location for 2 seconds.

6. The memory location will blink, showing that the sequence pattern is now saved to a memory location.

7. To access memory locations with a stored sequence pattern, press and hold the *active slot button* and then press a *step gate enable button* to load the corresponding memory location.

Understanding Scales and Modes

All modes (Ionian, Dorian, Phrygian, Lydian, Mixolydian, Aeolian, and Locrian) can be accessed from the Octone's *Major* scale.

For instance, C Ionian, D Dorian, E Phrygian, F Lydian, G Mixolydian, A Aeolian, and B Locrian all include the same notes.

C Ionian	=	C, D, E, F, G, A, B	=	also known as C Major
D Dorian	=	D, E, F, G, A, B, C		
E Phrygian	=	E, F, G, A, B, C, D		
F Lydian	=	F, G, A, B, C, D, E		
G Mixolydian	=	G, A, B, C, D, E, F		
A Aeolian	=	A, B, C, D, E, F, G	=	also known as A Natural Minor
B Locrian	=	B, C, D, E, F, G, A		

Mode Examples

If a patch is playing in the key of C Ionian, and the desired sequenced scale is D Dorian, tune the oscillator you wish to sequence to D, and then send it a major scale from the Octone.

If a patch is playing in the key of C Ionian, and the desired sequenced scale is G Mixolydian, tune the oscillator you wish to sequence to G, and then send it a major scale from the Octone.

If a patch is playing in the key of C Ionian, and the desired sequenced scale is A Aeolian, tune the oscillator you wish to sequence to A, and then send it a major scale from the Octone.

Factory Reset

A factory reset will enable all gates, disable all ratchets, assign two ratchets per step, and will erase all saved patterns. To reset the Octone to factory settings, hold down the *reset* and *scale selection buttons* when powering up. The *scale selection indicators* will flash one-by-one from bottom to top. When this begins, release the *reset* and *scale selection buttons*. **Power cycle the Octone** once the LED display has finished.

If two Octones are chained together, hold down the *reset* and *scale selection buttons* on both Octones when powering up. The *scale selection indicators* will flash one-by-one from bottom to top. When this begins, release the *reset* and *scale selection buttons* on both Octones. The *scale selection buttons* on both Octones will begin to flash. Press the *scale selection button* on the primary Octone. **Power cycle the Octone** once the LED display has finished.