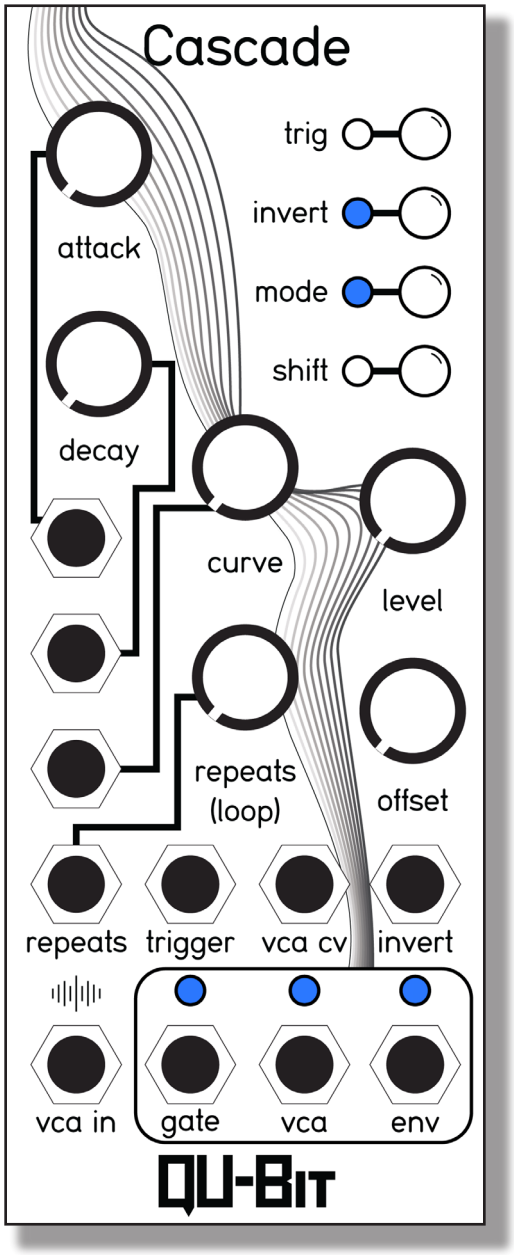
GETTING STARTED WITH CASCADE



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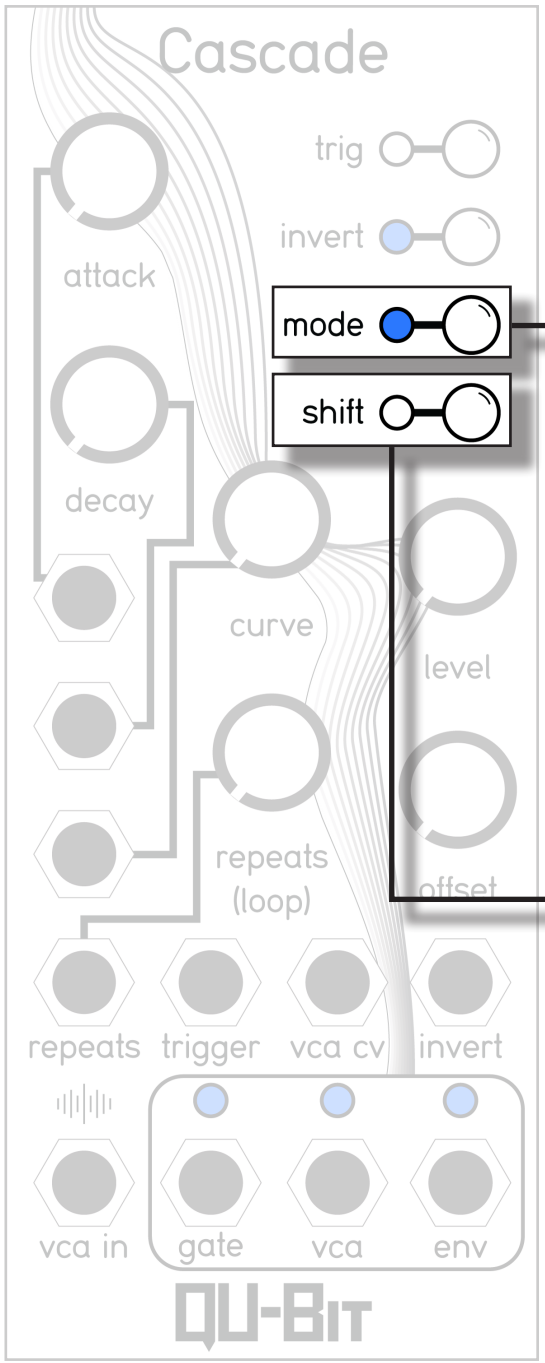

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DESCRIPTION

Cascade is a ratcheting envelope generator, VCA, and sound source all within a compact form factor. The unique interactions of its feature set open up new worlds of rhythmic patching and modulation. Easily create ratcheting sequences, bouncy-ball modulation, and pumping compression, all within a single module.

At its core is a powerful envelope generator, which is normaled to a high fidelity 2164 based VCA. You can patch in external audio to the VCA, or take advantage of 4 internal audio algorithms: white noise, 808 drums, and sine tones. Cascade will open up your system in ways that make you wonder how you ever lived without it.

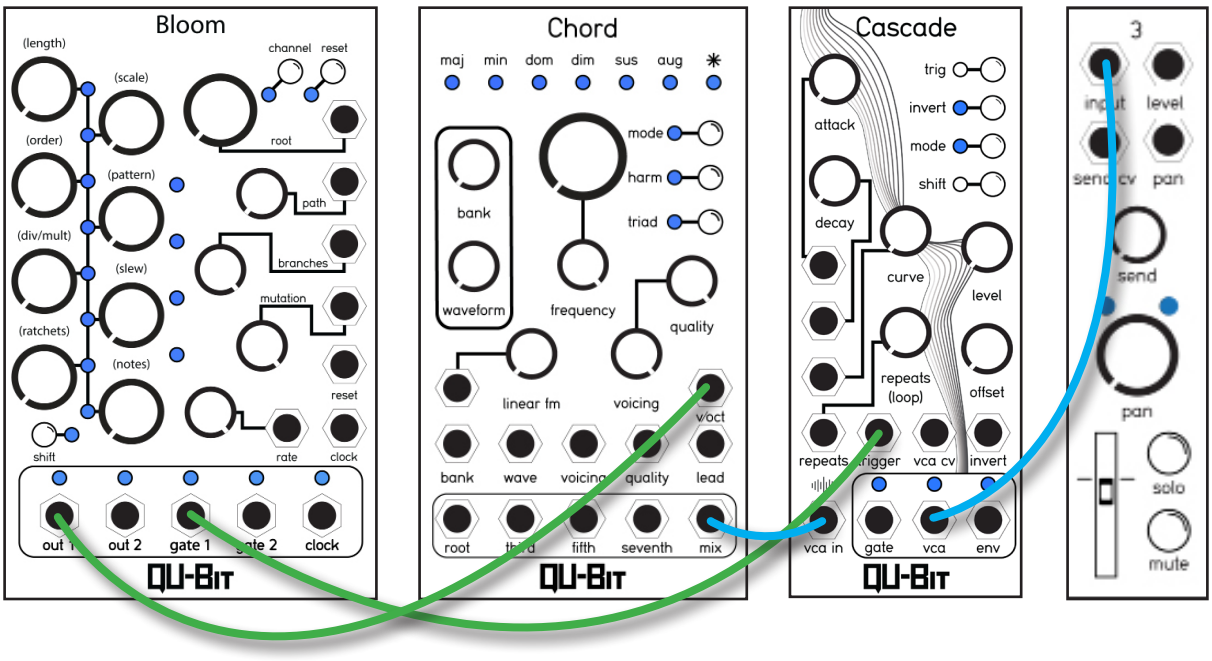
Installation

To install, locate 10HP 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 module with the red band facing the bottom of the module

FIRST PATCH

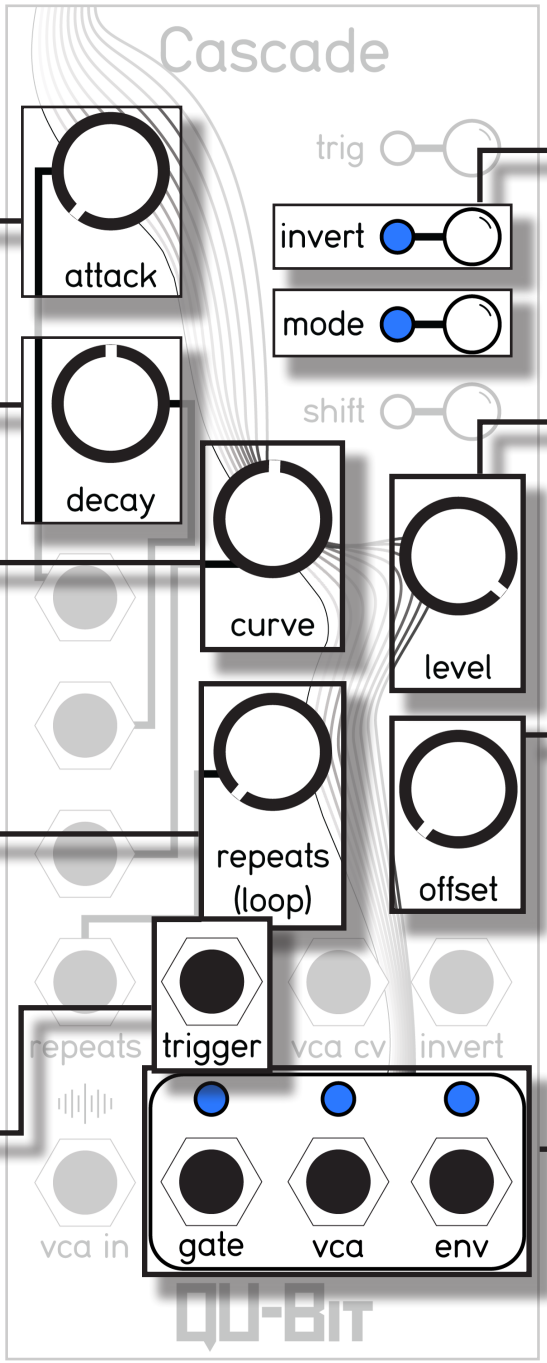
With Cascade's onboard Analog VCA, shaping your sound is as quick as sending your sound through Cascade via the VCA In and Out, and a Gate into the Trigger Input. Below is an example patch using Ratcheting AD Mode to achieve a simple staccato sequence.

✱ note: similar results are achievable with alternate modules alongside Cascade.



RATCHETING AD

Attack / Decay Envelope with Ratchetable Repeats



Attack time from .5ms to 5 seconds

Release time from .5ms to 10 seconds

Adjusts curve from logarithmic to linear to exponential

Controls # of repeats and clock multipliers: 1x, 2x, 3x, 4x, 6x, 8x, 12x, 16x

Triggers envelope/sets repeat tempo

Flips the envelope in place, maintaining same voltage range set by offset and level. (Green LED)

Adjusts the output level of the envelope signal

Controls an offset voltage to the envelope Range: 0V to 10V

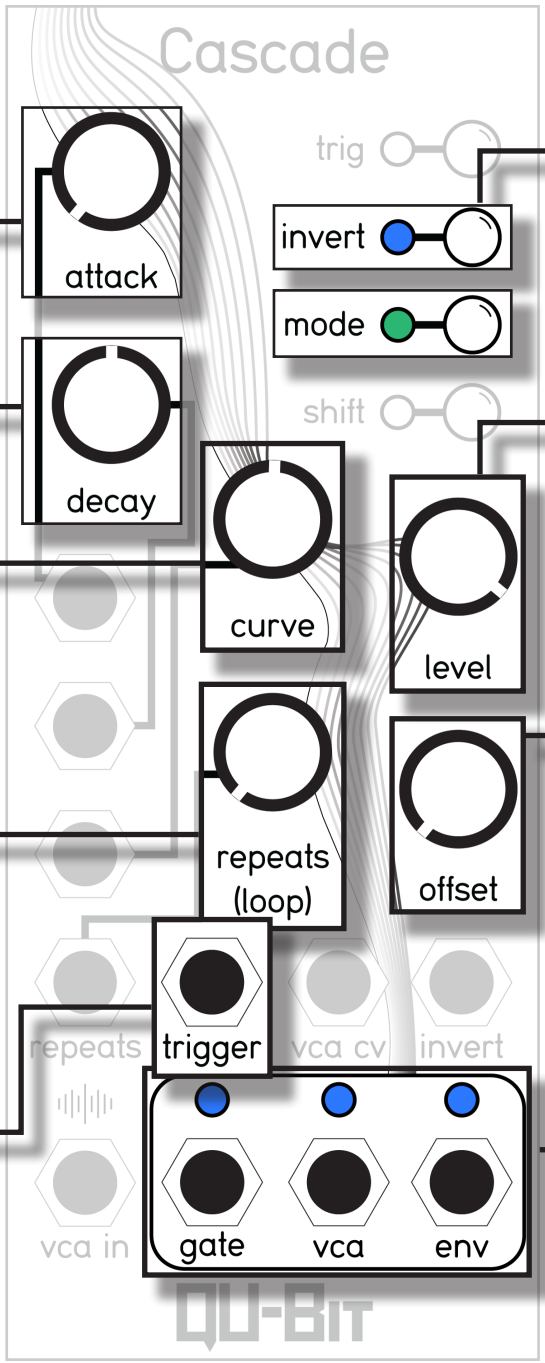
Envelope Output

VCA Output: Sends out signal (external or internal) which is shaped by the envelope every trigger

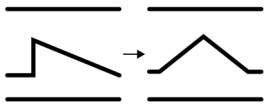
Gate Output: sends out a configurable gate signal every trigger (see Edit Functions for more)

AD ENVELOPE

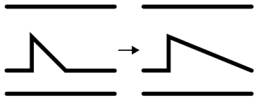
Attack / Decay



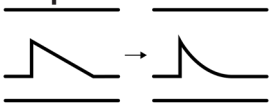
Attack time from .5ms to 5 seconds



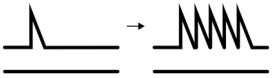
Release time from .5ms to 10 seconds



Adjusts curve from logarithmic to linear to exponential

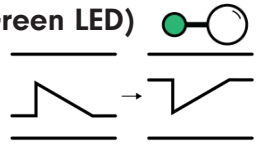


Adjusts envelope repeats from 1 to 16, infinite looping at knob end

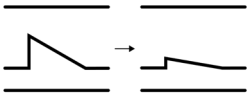


Triggers envelope/sets repeat tempo

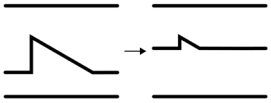
Flips the envelope in place, maintaining same voltage range set by offset and level. (Green LED)



Adjusts the output level of the envelope signal



Controls an offset voltage to the envelope Range: 0V to 10V



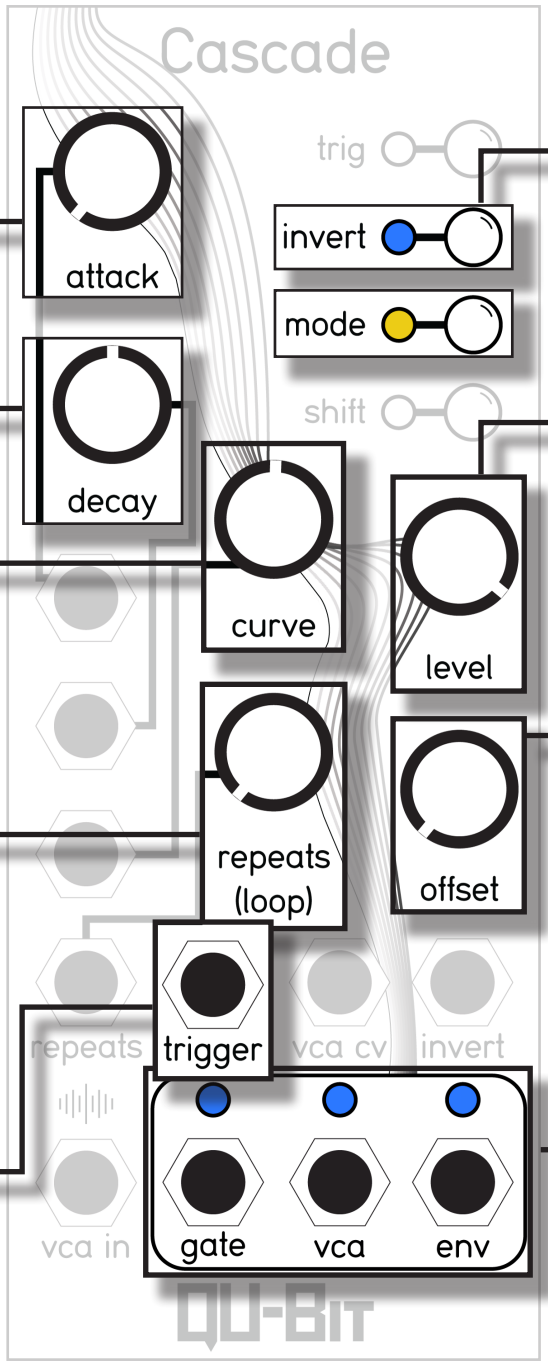
Envelope Output

VCA Output: Sends out signal (external or internal) which is shaped by the envelope every trigger

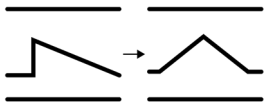
Gate Output: sends out a configurable gate signal every trigger (see Edit Functions for more)

ASR ENVELOPE

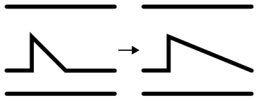
Attack / Decay Envelope with Gate Configured Sustain



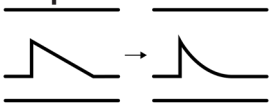
Attack time from .5ms to 5 seconds



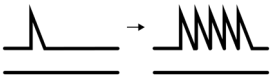
Release time from .5ms to 10 seconds



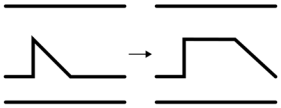
Adjusts curve from logarithmic to linear to exponential



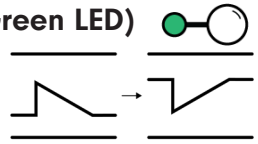
Adjusts envelope repeats from 1 to 16, infinite looping at knob end.



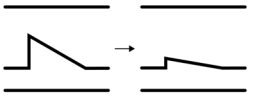
Triggers envelope/ gate length sets sustain



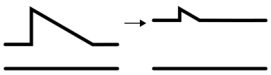
Flips the envelope in place, maintaining same voltage range set by offset and level. (Green LED)



Adjusts the output level of the envelope signal



Controls an offset voltage to the envelope Range: 0V to 10V



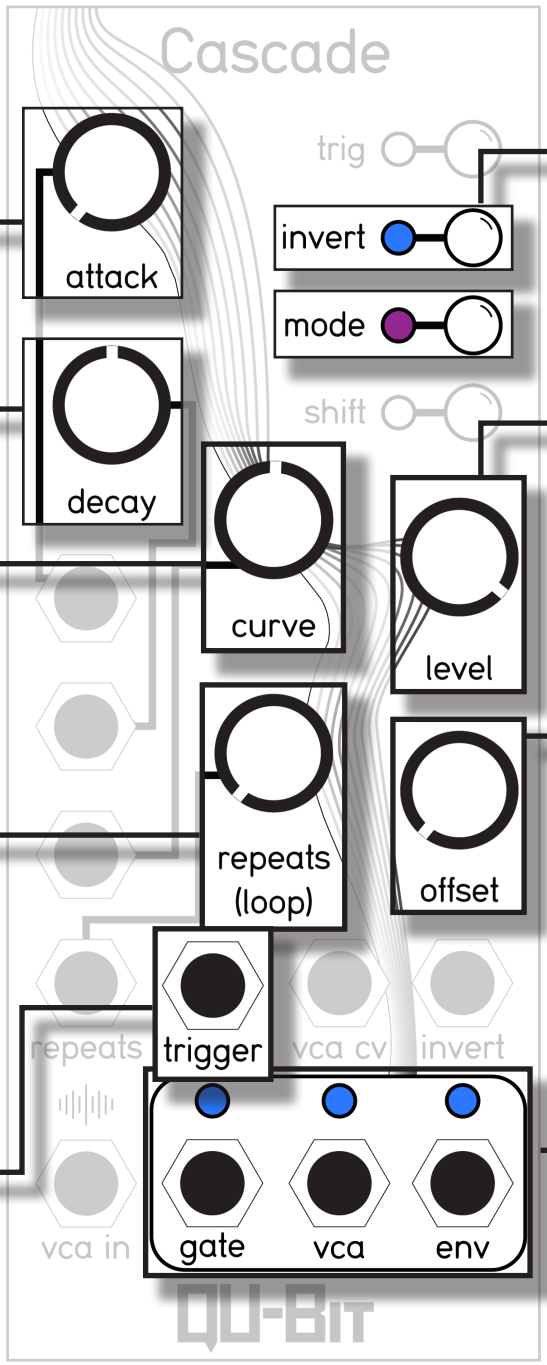
Envelope Output

VCA Output: Sends out signal (external or internal) which is shaped by the envelope every trigger

Gate Output: sends out a configurable gate signal every trigger (see Edit Functions for more)

ADSR ENVELOPE

Attack / Decay / Sustain / Release Envelope



Attack time from .5ms to 5 seconds

Decay time from .5ms to 5 seconds

Sustain Level set from 0V to value set by Level

Release time from .5ms to 5 seconds

Triggers envelope

Flips the envelope in place, maintaining same voltage range set by offset and level. (Green LED)

Adjusts the output level of the envelope signal

Controls an offset voltage to the envelope Range: 0V to 10V

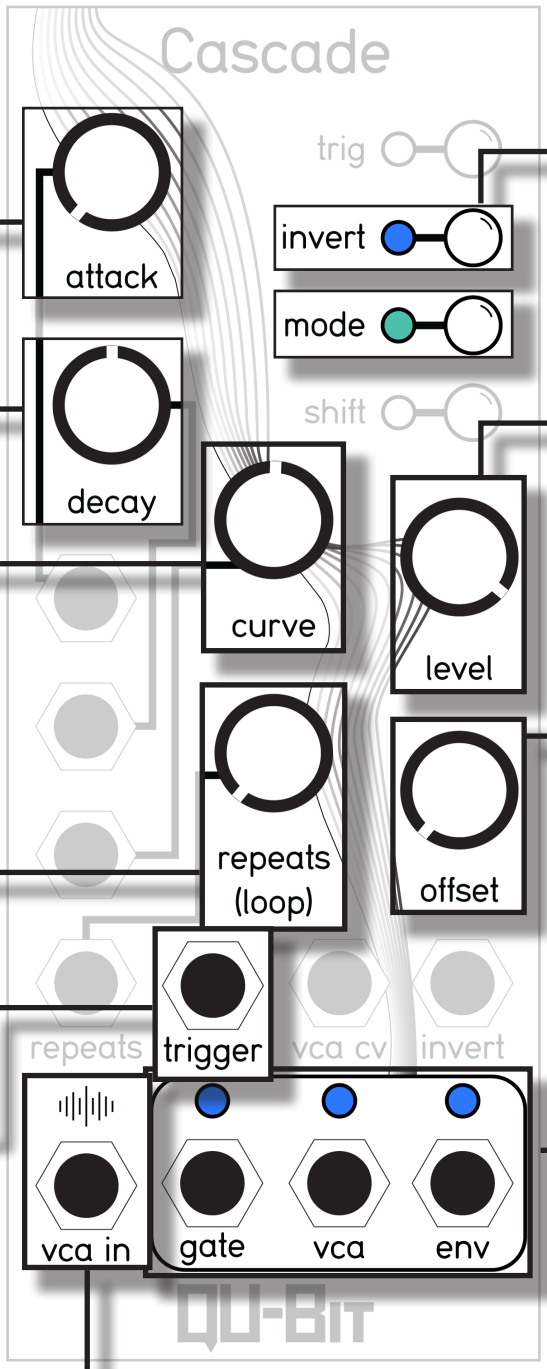
Envelope Output

VCA Output: Sends out signal (external or internal) which is shaped by the envelope every trigger

Gate Output: sends out a configurable gate signal every trigger (see Edit Functions for more)

ENVELOPE FOLLOWER

Envelope Generator with Audio Detection



Attack time from .5ms to 5 seconds

Decay time from .5ms to 5 seconds

Adjusts the response curve/sensitivity to the follower

Controls the threshold for the detection

Triggers a virtual sound source injected into the follower detection.

Audio Input

Flips the envelope in place, maintaining same voltage range set by offset and level. (Green LED)

Adjusts the output level of the envelope signal

Controls an offset voltage to the envelope Range: 0V to 10V

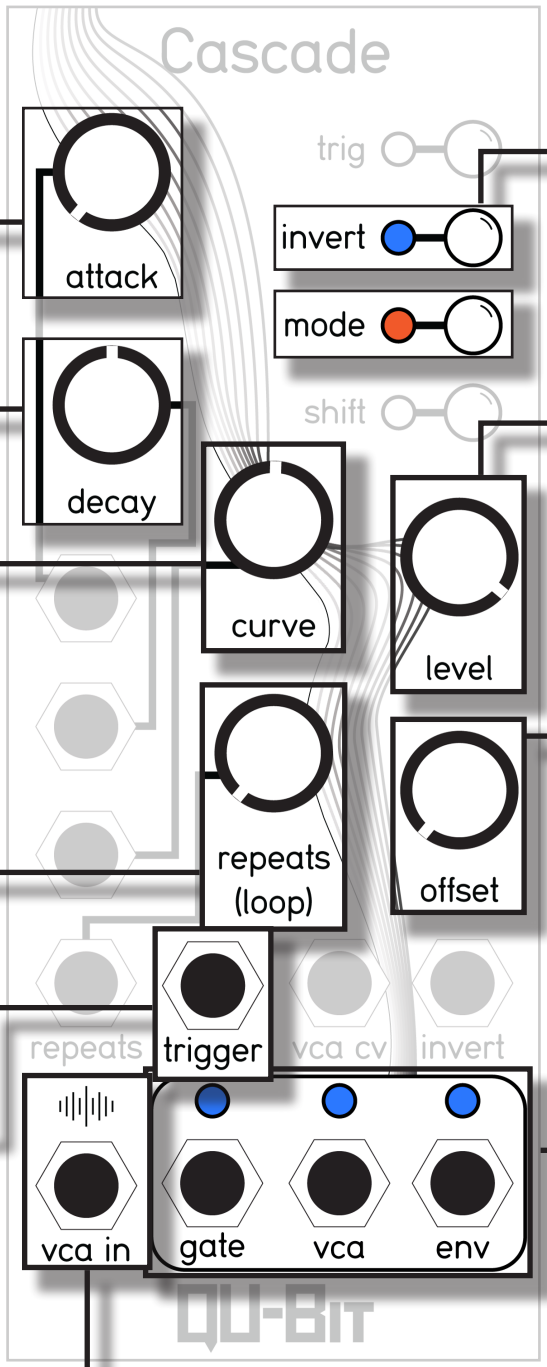
Envelope Output

VCA Output: Sends out signal (external or internal) which is shaped by the Follower

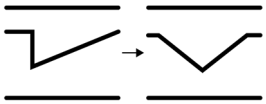
Gate Output: Gate goes HIGH when the signal is above the threshold, and LOW when it is below

COMPRESSOR

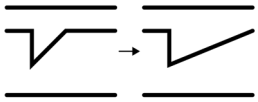
Compressor with Virtual Sidechain



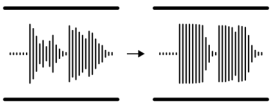
Attack time from .5ms to 5 seconds



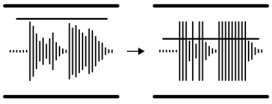
Decay time from .5ms to 5 seconds



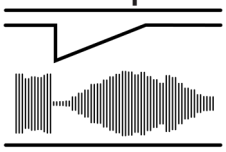
Compression ratio adjustment



Controls the compression threshold

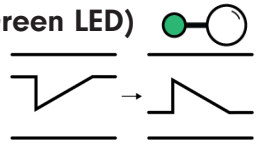


Triggers a virtual sound source injected into the compressor

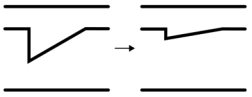


Audio Input

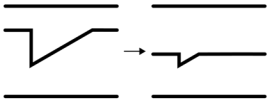
Flips the envelope in place, maintaining same voltage range set by offset and level. (Green LED)



Adjusts the output level of the envelope signal



Controls an offset voltage to the envelope Range: 0V to 10V

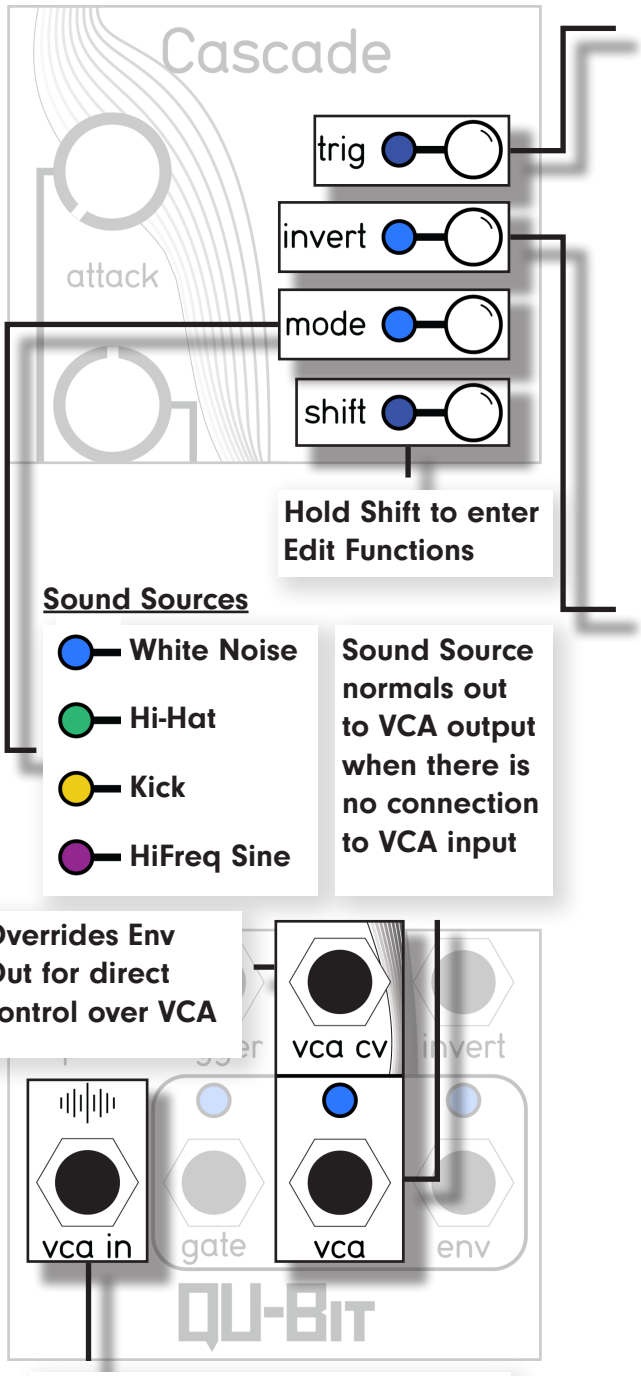


Envelope Output

VCA Output: Sends out signal (external or internal) which is compressed

Gate Output: Gate goes HIGH when the compressor is engaged, and gain control is in effect

SOUND SOURCES & EDIT FUNCTIONS



Gravity Modes

- No Gravity
- Amplitude Gravity
- Amplitude and Time Gravity

Hold Shift to enter Edit Functions

Sound Sources

- White Noise
- Hi-Hat
- Kick
- HiFreq Sine

Sound Source normals out to VCA output when there is no connection to VCA input

Gate Output Modes

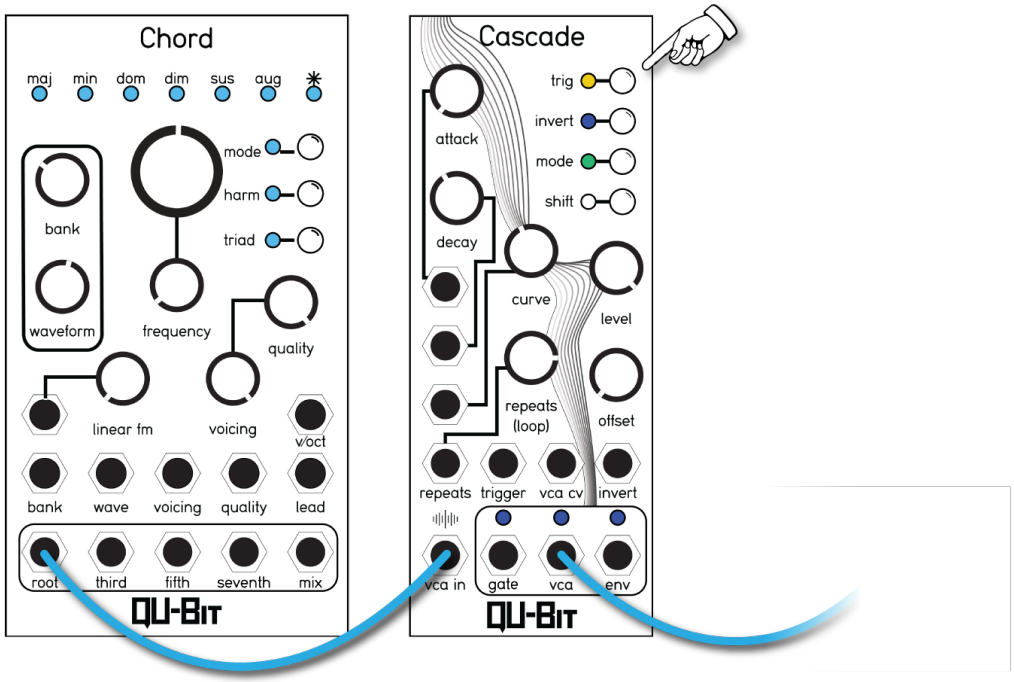
- 6ms Trigger at start of every envelope
- EOD Mode: Gate is HIGH when envelope is not in decay stage
- EOA Mode: Gate is HIGH when envelope is not in attack stage

Overrides Env Out for direct control over VCA

Input for external sound sources. Used for Envelope Follower, Compressor, and VCA

For a more detailed look at Cascade, additional example patches, and more, head over to the product page and manual here:
www.qubitelectronix.com/shop/cascade

BOUNCY BALL



Emulate the effect of a bouncing ball by adjusting Gravity and Repeats in AD mode.

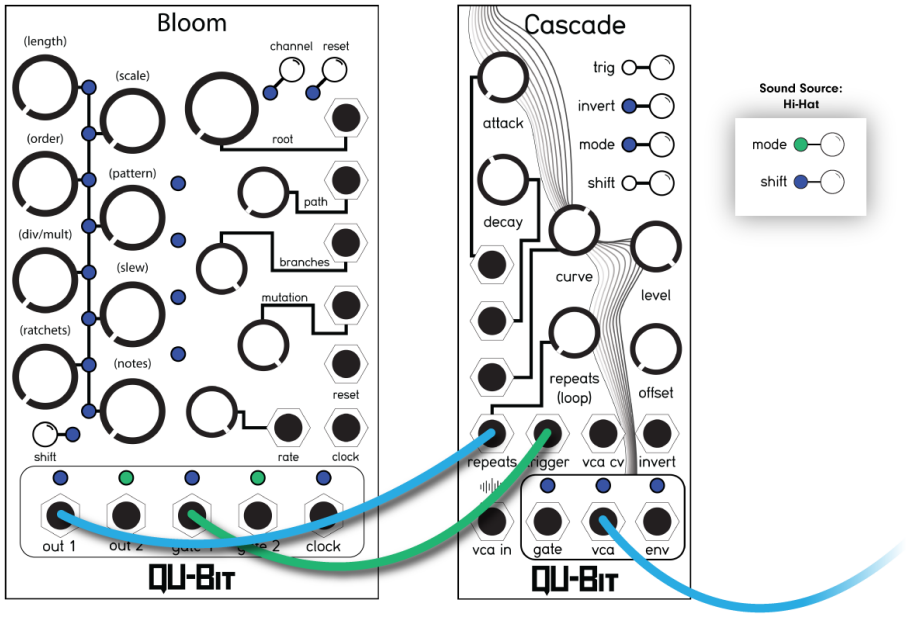
Modules: Cascade, Sound Source (Chord)

Cascade Settings:

- Mode: AD (Green LED)
- Edit Functions: Apmlitude and Time Gravity (Gold Trig LED)
- Attack: 0%
- Decay: ~45%
- Curve: ~70%
- Repeats: x16
- Level: 100%
- Offset: 0%

Don't want to use a sound source? Send out Cascade's VCA which normals to 1 of 4 sound sources you can choose by using the SHIFT MODE command. Cascade will shape the sound to the bounciness amount you desire.

TRAP HI-HATS



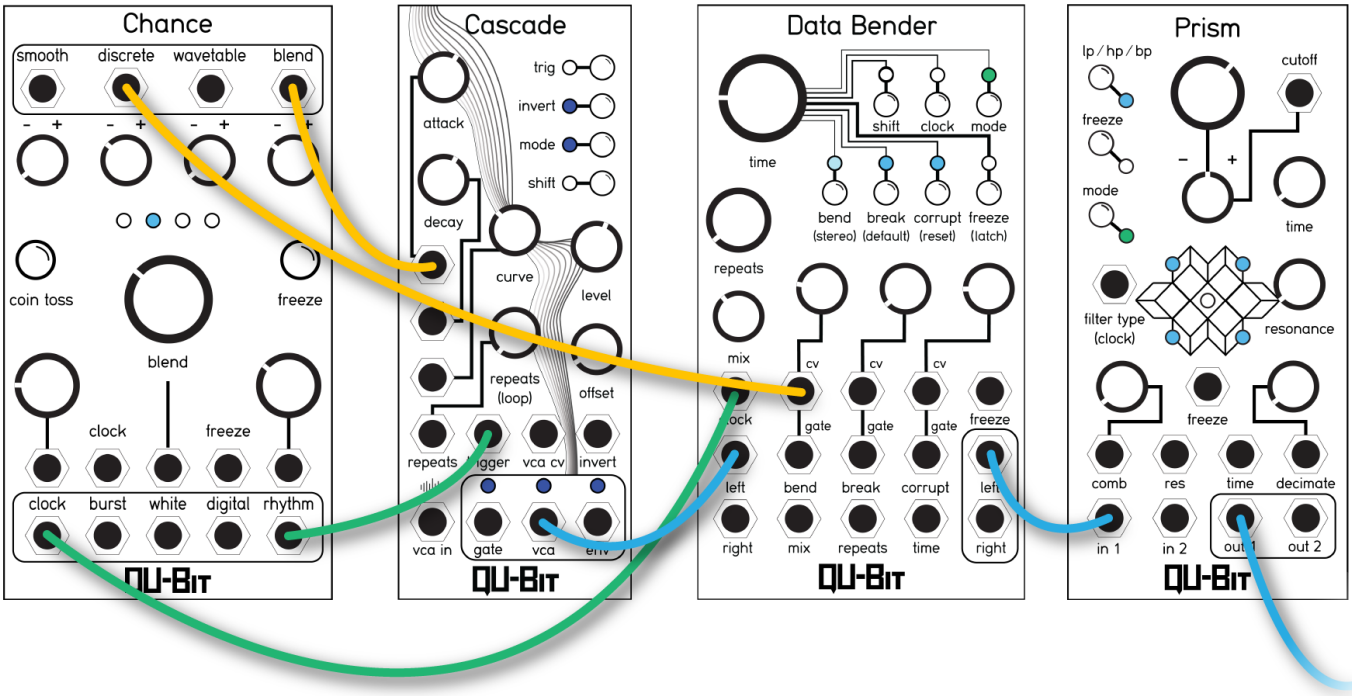
Create bangin trap hats with Cascade's onboard Hi-Hat sound source and the Ratcheting AD Envelope.

Modules: Cascade, Gate and CV source (Bloom)

- Mode: Ratcheting AD (Blue LED)
- Edit Functions: Hi-Hat Sound Source (SHIFT MODE to Green LED)
- Attack: 0%
- Decay: ~45%
- Curve: ~70%
- Repeats: 0%
- Level: 100%
- Offset: 0%

Send Gate signal to the Trig input on Cascade. CV is sent to Repeats to increase/decrease the number of ratchets. TO get a consistent ratcheting experience, send a clock signal into the Trig input. For more experimental trap hats, send a gated sequence into Trig. Cascade's ratchet algorithm will adjust the repeats speed based on the distance between the triggers, creating an "auto ratchet" effect without modulating the repeats via the knob or CV. Add a random voltage source like Chance to Repeats and Decay, and your hats can be as tamed or wild as you see fit!

OCEAN WAVES



Sound Baths await with this serene ocean waves patch using Cascade's White Noise and sweeping envelopes.

Modules: Cascade, Gate and CV source (Chance), Effects processing (Data Bender, Prism)

- Mode: Ratcheting AD (Blue LED)
- Edit Functions: White Noise Sound Source (SHIFT MODE to Blue LED)
- Attack: ~75%
- Decay: ~75%
- Curve: ~40%
- Repeats: 0%
- Level: 50%
- Offset: 10%

Cascade is set to White Noise and using a slow attack and decay to simulate the rolling waves crashing onto the shore. The sound is then sent out to Data Bender for textural layering in Micro Mode, while adding a lower register pitch to echo distant waves. Prism follows Data Bender for additional filtering, allowing to to float above the sea, or duck dive into the abyss. Gate and CV is sent out from Chance to emulate the rolling tides, and varying intensities of wave crashes by modulating Cascade's Attack.