

Acid Rain — Constellation

- [Manual PDF](#)
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[Download: Constellation Firmware V1.1 Manual PDF](#)

Constellation Eurorack Cheat Sheet

OVERVIEW

Constellation is an 8-channel trigger/gate pattern generator with advanced Euclidean rhythm capabilities, rich logic, pattern modifiers (burst, ratchet, chance), polyrhythmic channel clocks, freely assignable CV modulation, and robust save/load options.

QUICK START

1. **Patch 1–5 Channel Outputs** (top row of module) to drum modules:
2. Ch1: Kick
3. Ch2: Snare/Clap
4. Ch3: Closed Hi-Hat
5. Ch4: Open Hi-Hat
6. Ch5: Rimshot/other sound
7. **Power on:** Plays "4 on the floor" @120 BPM by default.

8. **Press Load** — select any of the 20 pulsing buttons (central 2 rows) for quick start patterns. Use **live** mode to play/save slots like a keyboard.
 9. Patch a slow-moving **0–5 V CV** source into CV Input I for pattern evolution.
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INPUT AND OUTPUT JACKS

Inputs

- **Clock (clk):** External main clock input, expects 0–5V pulse. With cable inserted, switches to external clocking.
- **Reset:** External reset (rising edge = reset).
- **CV Inputs (I–VIII):**
- **Assignable.** Not fixed to channels; can independently or cascadingly control any parameter on any pattern/channel.
- **Voltage Ranges:**
 - **Divide , Length , Ratchet : 0–5V (Unipolar)**
 - **Events , Rotate , Burst , Chance , Width , Mute , Load : -5V to +5V (Bipolar)**
 - See details below for modulation ranges.

Outputs

- **Clock:** +5V/0V digital pulse (either internal or mirrored external clock, depending on clocking).
 - **Reset:** +5V pulse on reset event.
 - **Channel Outputs (1–8):** +5V when active, 0V inactive — outputting final channel pattern as trigger/gate.
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FRONT PANEL CONTROL REFERENCE

Buttons

- **Top Row:**
- clock , reset , save , load , input , random
- **Middle Rows (Horizontal, 8 each):**
- Pattern Select (P1–P8), Channel Select (I–VIII), Channel Mute, Live
- **Pattern/Channel Parameter:**
- AND , OR , XOR , flop , width , burst , ratchet , chance , divide , rotate , events , length
- **Others:**
- Mute, Live, Flop, Logic, Pattern Select, Pattern Parameter

Encoder

- **Navigation** through channels/patterns/parameters/menus
 - **Adjust** values (press for coarse/fine adjustment)
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CHANNEL AND PARAMETER STRUCTURE

- **8 Channels, each with 8 Patterns** (64 patterns total)
 - Each pattern: Divide, Length, Events, Rotate, Burst, Ratchet, Chance
 - Patterns combine via Logic (AND/OR/XOR).
- **Channel Parameters:**
 - Logic, Flip-flop (gate vs. trigger behavior), Width

PATTERN MODIFIERS

- **Burst:** Each trigger = sequence of triggers (one per clock).
 - **Ratchet:** Each trigger repeated between clocks (dense cluster).
 - **Chance:** 0–100% probabilistic gate per event.
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NAVIGATION & MENUS

- **Edit Mode:** Default, full parameter editing.
 - **Clock Menu:** BPM (internal clock, tap tempo), main clock div/mult, swing, channel clocks per channel.
 - `width` button: main clock swing (50–90%).
 - `mute` button: stops/starts internal clock.
 - `AND` button: tap tempo.
 - **Mute Menu:** Mute channels/patterns; press again to unmute.
 - **Save/Load Menu:**
 - Save/Load any channel/patterns into 20 slots per bank (999 banks).
 - Save/load channel mutes, main clock, input assignments as options.
 - `reset` in load menu: forces re-sync.
 - **Live Mode:**
 - Play save slots "momentarily" (release = revert).
 - Momentarily mute channels.
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CV INPUT MODULATION SUMMARY

Parameter	Volt. Range	Behavior
Divide	0–5V unipolar	1 to base value (set)
Length	0–5V unipolar	1 to base value (set)
Events	-5V–+5V	0 to length, centered at base value
Rotate	-5V–+5V	0 to length, centered at base value
Burst	-5V–+5V	1 to max burst, centered at base value
Ratchet	0–5V unipolar	1 to base value (set)
Chance	-5V–+5V	0-100%, centered at base value

Parameter	Volt. Range	Behavior
Width	-5V–+5V	0–100%, centered at base value
Mute	Gate/Trigger	Mutes/unmutes on gate/trigger edge
Load	Gate/Trigger	Loads selected save slot while high

- *CV is sampled once per rising edge of the channel clock.*

TIPS AND UTILITIES

- **Pattern Reset:** Hold pattern button + press reset.
- **CV Inputs Cascade:** Inputs I–VIII cascade L → R for multi-parameter modulation; can disable in settings (`cv_norm = 0`).
- **Save/Load Individual Channels:** In save menu, press only channels to save.
- **Autosave:** Module autosaves every few seconds.
- **Factory Reset:** Delete all bank folders from SD card for blank state.
- **Restore Quickstart Patterns:** Download `000.zip` from Acid Rain website.

LOGIC MODES (Channel):

- **AND:** Only outputs high if all active patterns are high.
- **OR:** Outputs high if any active patterns are high.
- **XOR:** Outputs high if odd number of patterns are high.

FIRMWARE UPDATES

1. Power off, remove/inject micro SD to PC.
2. Download latest firmware; place `FW.BIN` on root.
3. Reinsert SD, power on, wait for update animation.

QUICK REFERENCE: BUTTON SHORTCUTS

Function	Action
Pattern Reset	Hold Pattern + Press Reset
Enter Mute Menu	Press <code>mute</code>
Save/Load Bank	<code>save</code> / <code>load</code> , select bank/slot
Enter Clock Menu	Press <code>clock</code>
Live Mode	Press <code>live</code>
Coarse Adjust	Encoder short press (flashing display)
Randomize Parameter	Press <code>random</code> with parameter selected
Remove CV Assign	Hold Reset + Input button in Input Menu
Tap Tempo	Press "AND" button in Clock Menu

Manual & Resources:

- [Constellation Firmware Manual PDF](#)
- [Generated With Eurorack Processor](#)