

# Mutable Instruments – Branches

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- [Manual PDF](#)
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[Branches Dual Bernoulli Gate – Official Manual PDF](#)

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## Creative Modulation Strategies for Mutable Instruments Branches

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As a Eurorack musician focused on percussive, bass-heavy, and atmospheric sound design, Mutable Instruments Branches offers a unique utility for injecting controlled randomness and dynamic switch-based motion into your patch. Here are some ways to leverage its features for maximum creative impact:

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### Overview of Modulation Options

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Branches is a **dual Bernoulli gate**—it takes a trigger/gate signal and probabilistically routes it to one of two outputs. Key features for modulation:  
- **Probability knob (and CV input)**: Sets/randomizes the odds of where each trigger lands.  
- **Toggle Mode**: Remembers previous state, sending triggers in toggling sequence.  
- **Latch Mode**: Output stays at +5V until another output is triggered.

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# Applications

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## 1. Distorted Percussive Sounds

- **Patch model:** Branches splits/distracts rhythm sources (**kick/ snare triggers**, Euclidean patterns, more).
- **How to modulate:**
  - CV Modulate the probability input with fast LFOs, random S&H voltages, envelopes from your percussion voices for instantaneously shifting rhythms.
  - Use **Toggle or Latch mode** to create varied, choking, or gated triggers for drum modules, making grooves unpredictable and heavily syncopated.
  - Feed Branches output(s) to a **distortion or wavefolder** after a drum module – rapid, random switching creates 'glitchy', tearing percussive effects.

### Example Patch:

- Kick trigger to Branches IN.
  - Set probability to 50%.
  - CV in from an envelope or random module.
  - Outputs to two different percussion modules or one drum sound and a noise source.
  - Run final audio to a distortion unit for harsh, broken-up percussion.
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## 2. Crazy Basslines (Dubstep/Drum & Bass)

- **Patch model:** Use Branches to randomly or periodically switch between bassline patterns, wavetables, filter modulations, or envelopes.
- **How to modulate:**
  - Use a popcorn LFO or rhythmic random CV to the **probability CV input** to switch between classic reese bass and growl patches, or dual filter/folder chains.

- In **toggle mode**, use a repeating gate/clock so the bassline alternates between two different modulation destinations (such as two synced complex oscillators or filter cutoff voltages).
- **Trigger re-triggers, sample holds, or envelope re-firings** for weird syncopated movement.

**Example Patch:**

- **Sequencer triggers to Branches IN.**
  - **Outputs control two different bass voices (i.e., clean and dirty).**
  - **Random or clocked CV to probability input.**
  - **Modulate ‘which bass’ with envelope followers from your main drum hits.**
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### 3. Haunting Atmospheric Pads

- **Patch model:** Branches provides semi-random gates to activate/dampen modulations or send CV to effects, filters, or VCA chains for pads.
- **How to modulate:**
  - Use very slow LFO or gentle, attenuated random voltage on probability CV in: produces shifting, unpredictable movement between outputs.
  - In **Latch mode**, create sustained, droning gate states that change only with new triggers—drives slow fade-ins/out on reverb, delay, or granular parameters.
  - Gate pads’ modulations **between two reverbs or FX sends**, randomly accenting different portions of the stereo field or wet/dry amount.

**Example Patch:**

- **Slow clock or enveloped pad gate to Branches IN.**
- **Outputs to two VCA/FX send paths:** one dry, one through intense reverb/lush chorus.
- **CV input from slow LFO.**

- **Latch mode ON:** one reverb washes in, another fades out, pads morph unpredictably for organic/ghostly ambience.
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## Tips for Further Exploration

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- **Stack multiple Branches modules** to create multi-layered decision trees for incredibly complex, probabilistic patches.
  - **Volatile Performances:** Use manual toggle/latch switching in live performance to warp between order and chaos.
  - **Non-audio signals:** Branches is not just for gates—use to steer modulation sources (clock, random, LFO triggers) for maximum surprise.
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## Useful Links

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- [Branches Dual Bernoulli Gate – Official Manual PDF](#)
  - [Generated With Eurorack Processor](#)
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