

# Qu-Bit – Synapse

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## Qu-Bit Synapse Cheat Sheet

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A powerful crossfade switch with digital routing/mixing, memory presets, DC modulation, LFOs, and flexible CV control for Eurorack.

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## Controls Reference

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### Knobs & Encoders

Name	Function
<b>Crossfade (4x)</b>	Set blend between A and B inputs per channel. CV controllable ( -5V to +5V ).
<b>Terminal Encoder</b>	Shifts channel outputs to different output jacks (routing). Press to reset positions. CV controllable ( -5V to +5V ).
<b>Memory Knob</b>	Selects memory bank (8 total); load preset crossfade positions. Bypass memory fully CCW. Also sets LFO phase relationship and DC offset in edit modes.
<b>Inertia Knob</b>	Sets slew/smooth (0–5s), affects fader, memory, and CV changes. Also controls LFO frequency in edit mode. Also enables click-less switching in edit mode.

## Buttons

Name	Function
<b>Save</b>	Store current crossfade/routing to memory bank.
<b>Scatter</b>	Shuffle output channel positions.
<b>Advance</b>	Move all outputs one to the right (sequential switch).

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## Inputs & Outputs

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### Inputs

Jack	Type	Voltage Range	Description
<b>A (4x)</b>	Signal In	Audio/CV (DC)	Main per-channel input
<b>B (4x)</b>	Signal In	Audio/CV (DC)	Alternate per-channel input, can be normalled to +5V offset
<b>Crossfade (4x)</b>	CV In	-5V to +5V	Crossfader per channel; adds to knob position
<b>Terminal</b>	CV In	-5V to +5V	Shifts output routing
<b>Advance</b>	Trigger/Gate	N/A	Steps all outputs one to the right
<b>Scatter</b>	Trigger/Gate	N/A	Randomizes output routes

## Outputs

Jack	Type	Description
<b>Out (1–4)</b>	Audio/CV Out	Final output of each switch channel post crossfade and routing
<b>1+2</b>	Sum Out	Sum of output from Out 1 and Out 2
<b>3+4</b>	Sum Out	Sum of output from Out 3 and Out 4
<b>Sum</b>	Sum Out	Pre-switch sum of each crossfade channel output

## Special/Shift Functions (Hold + Action)

Hold...	While Turning...	Action
Terminal	Crossfade knob	Per-channel master volume
Terminal	Memory knob	+5V DC offset to B inputs (center point on/off)
Terminal	Inertia knob	Click-less switching on/off
Terminal	Scatter button	Set linear/constant loudness fade curve
Terminal	Save button	Factory reset
Save	Scatter button	Randomize memory positions
Save	Terminal button	Reset all memory to A only
Scatter		Set LFO amplitude per channel

Hold...	While Turning...	Action
	Crossfade knob	
Scatter	Memory knob	Set LFO phase relationships
Scatter	Inertia knob	Set LFO frequency
Scatter	Terminal button	Reset LFOs to default
Scatter	Save button	Randomize internal modulation (LFOs)

*LEDs will indicate status for certain functions.*

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## Voltage Control Summary

- **All CV Inputs:** Range -5V to +5V
  - **Crossfade:** CV adds/subtracts from knob position
  - **Terminal:** CV positive = right, negative = left output shift
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## Quick Operation Examples

- **Crossfade between A/B:** Turn crossfade knob per channel, or patch CV.
  - **Sequencer Mode:** Enable +5V DC offset to B inputs; modulate crossfade with CVs.
  - **Switch outputs:** Turn Terminal knob or use Terminal CV input.
  - **Shuffle/Advance routing:** Use Scatter or Advance buttons/inputs.
  - **Save/Recall Scene:** Set crossfades/routing, select memory slot, press Save.
  - **LFO Modulation:** Hold Scatter, turn crossfade knob for per-channel LFO amount; adjust inertia for speed.
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For more advanced usage, see [Qu-Bit Synapse Manual PDF](#).

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