RASTER

The Raster™ is a digital delay with a pitch and phase/frequency shifter integrated into the feedback loop. Forward or reverse delays can be shifted once or have continuously shifted repeats. With flexible modulation and extensive stereo controls, it delivers a wide range of sounds including modulated and harmonized delays, reverse delays, chorus, arpeggios, infinite descents, chaotic self-oscillation, and continuously evolving soundscapes.

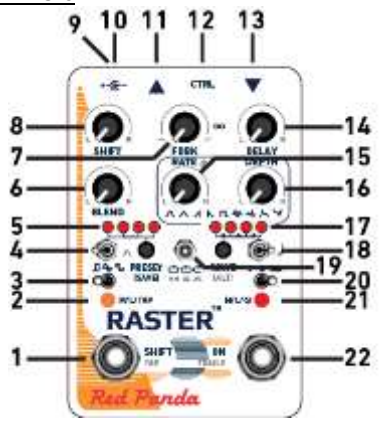
GETTING STARTED

Start with **RATE** and **DEPTH** at minimum, **SHIFT** off, and all toggle switches at middle. The **BLEND**, **FDBK**, and **DELAY** knobs are a three knob delay.

The middle toggle switch changes between forward and reverse delay. The right top toggle smoothly jumps between 400/800/1600 ms delay ranges.

Press the **SHIFT** footswitch and adjust the **SHIFT** knob and left top toggle switch to introduce transposing, detuning, and frequency shifting.

CONTROLS



1. Shift on/off or tap tempo footswitch. Hold to disable tap tempo.
2. Shift on indicator.
3. Momentary/Latching/Tap.
4. Shift mode:
   - ♫ transpose +/- 12 semitones
   - detune
   - phase/frequency shift
5. Preset selection. Hold to save.

CONTROLS (CONT.)

6. Dry/wet blend.
7. Feedback amount. Self oscillates at approximately 3:00 and above.
8. Shift amount (off at 12:00).
9. USB mini B.
10. Power: 9V DC 250 mA or higher.
11. Output (TRS stereo).
12. Control port (expression/MIDI/remote)
13. Input (TRS). Default mono in/stereo out. Use editor to configure.
14. Delay time.
15. LFO frequency. Syncs to tap tempo or MIDI clock. Use editor to set divisions.
16. Modulation depth.
17. Modulation waveform:
    - ●○○○ Sine
    - ●●○○ Triangle
    - ○●○○ Ramp up
    - ○●●○ Ramp down
    - ○○●○ Square
    - ○○●● Random step
    - ○○○● Random smooth
    - ●●●○ Envelope
    - ○●●● Inverse envelope

CONTROLS (CONT.)

18. Delay range: 400 / 800 / 1600 ms. 3200 ms (1600 reverse) via editor/MIDI.
19. Feedback mode:
    - Reverse / shift all repeats
    - Forward / shift all repeats
    - Forward / shift once
    - editor Reverse / shift once
20. **ON** Momentary/Latching/mute out. Mute out (**Ø**) mutes output in bypass with input active, always recording.
21. Effect on indicator. Blinks yellow for tap tempo and MIDI clock.
22. Effect on/bypass.

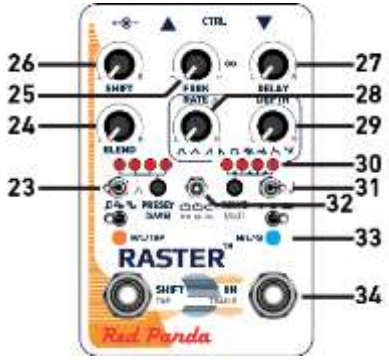
PRESETS

Press the **PRESET** button to cycle through presets 1-4 and the live knob settings.

To save a preset, select the desired preset and hold the **PRESET** button to store the current settings in that location. The right LED will blink green.

127 presets are available via MIDI program change messages. To save a preset, hold down the **PRESET** button while sending a MIDI program change.

CONTROLS — ALT



Hold down **WAVE/[ALT]** button to edit secondary parameters. Right LED will turn cyan.
Settings are saved to presets and remembered when power is off. Knobs at center to turn off.

23. Modulation destination: effect level (left), shift (middle), delay (right).
24. Blend left/right balance.
25. Tone. Turning clockwise, adjusts delay from dark to full frequency, then emphasizes attack at maximum setting.

CONTROLS — ALT (CONT.)

26. Shift left/right balance. Transpose has fixed settings including unison, octaves, chords, and inversions. Detune and frequency shift reduce and then invert one channel as the knob is moved from noon. Use editor or MIDI to enable independent shift settings per channel.
27. Left/right channel delay ratio.
28. LFO left/right channel phase difference.
29. Modulation depth left/right balance.
30. Hold button to edit secondary parameters.
31. Delay tap note divisions: 8th (left), dotted 8th (middle), quarter note (right). More divisions available via editor.
32. Delay structure:
    - ▪▪ series (left → right)
    - = parallel (left // right)
    - ✕ ping pong (left ↔ right)
33. Cyan if editing secondary parameters.
34. Trails on/off.

POWER

Use an isolated, well-regulated 9V DC power supply that can deliver 250 mA or more. See our knowledge base for information about specific power supplies.

If the pedal detects a problem with the power supply, the bypass LED will turn magenta and switch to bypass.

USB PORT

The Mini USB port supports:
- firmware updates
- MIDI

CTRL PORT

The **CTRL** (control) port supports:
- expression pedal
- control voltage (0-3.3V)
- Red Panda Remote 4 (or DIY switches)
- Tap tempo (normally open)
- 1/4" MIDI (via 3rd-party adapters)

EXPRESSION PEDAL

Use a pedal with a 10-25 kΩ linear pot.
1. Hold right footswitch while plugging in exp.
2. Move to heel position, adjust knobs.
3. Move to toe position, adjust knobs.
4. Hold right footswitch for 2 seconds to save.

Default assignment is **DELAY** knob.

REMOTE SWITCH

1. Hold right footswitch while plugging in.
2. Press footswitch for desired mode.
3. Hold right footswitch for 2 seconds to save.

RESOURCES

Getting started videos:
www.redpandalab.com/rtfm

Owner's manual:
www.redpandalab.com/downloads

Firmware updates:
www.redpandalab.com/downloads

Web-based editor (requires Chrome):
www.redpandalab.com/web-editor