Red Panda Lab CTRL BitMap 2 Bitcrusher Effects Pedal at Juno Records User Manual

Contents

Red Panda

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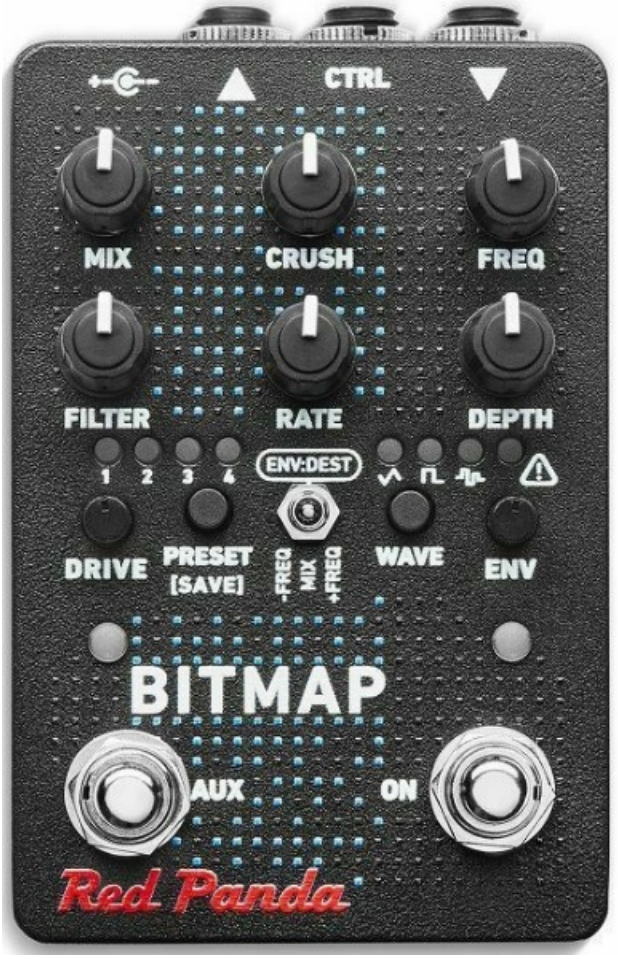


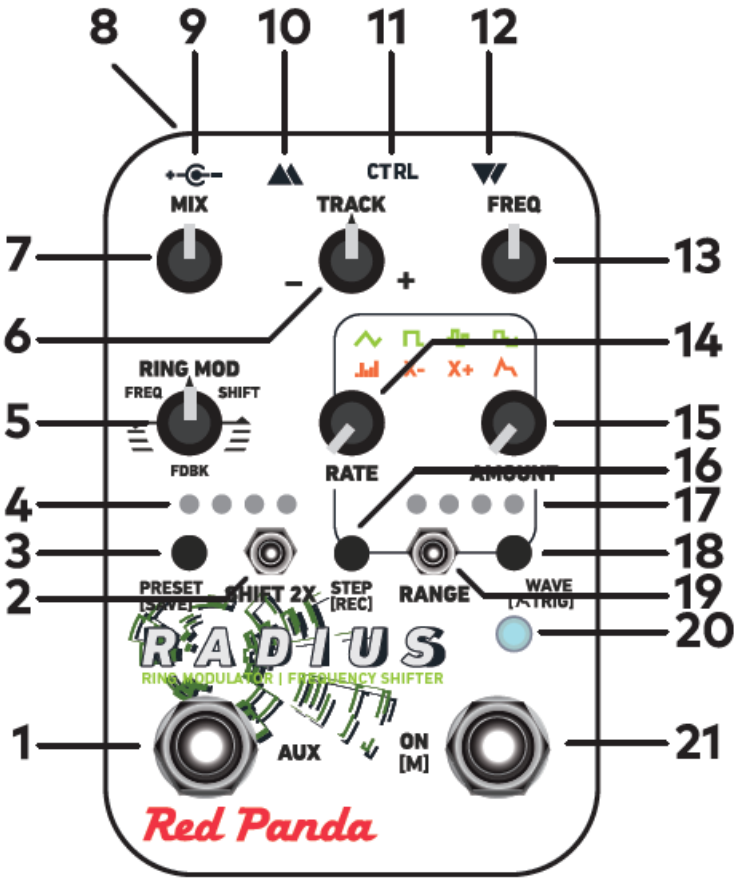
Introduction

The Radius is a stereo ring modulator and frequency shifter with pitch tracking and an advanced LFO. It smoothly transitions from ring modulation to frequency shifting and allows different frequency ratios for the upper and lower tones. Radius puts complex harmonic structures, bell-like tones, metallic textures, frequency shifting, soft tremolo, and bubbly phaser sounds at your fingertips.

A ring modulator multiplies two signal signals together to create new frequencies that are the sum and difference of the input frequencies. One signal is your instrument, and the other is an internal oscillator. The Radius can double the sum or difference frequency ratios and adjust their relative levels, unlocking a spectrum of timbres beyond traditional ring modulation.

Holding the left footswitch and playing a note will tune the carrier oscillator to that frequency. Pitch tracking maintains – or inverts – the pitch ratio as you play up and down the scale. Multiple LFO waveforms that can be envelope triggered, a step modulator, and envelope follower can add subtle dynamics or chaotic modulation.

RADIUS



CONTROLS

1. **AUX:** tap tempo
    - **Hold:** push-to-tune
2. **SHIFT 2X:**
    - lower/off/upper
3. PRESET select Hold: save
4. PRESET
    - indicator
5. RING MOD / FREQ SHIFT mix
6. Pitch TRACK
    - -100 to +100%
7. Wet / dry MIX
8. USB MIDI, firmware updates
9. Power
    1. 9V DC 200 mA
10. Stereo output (TRS)
    - **Tip:** left/mono
11. Expression / tap / MIDI in
12. Stereo input (TRS)
    - **Tip:** left/mono
13. Carrier oscillator frequency
14. Modulation rate
15. Modulation amount

16. Step modulator pattern record
17. Modulation wave indicator
18. Mod wave select
    - **Hold:** env trigger
19. Carrier oscillator range (lo/hi/qnt)
20. On / tap indicator
21. **ON** / **bypass Hold:** momentary

SPECIFICATIONS

- **Carrier frequency:** 0.65 – 4,000 Hz
- **LFO frequency:** 0.1 – 55 Hz
- **Input impedance:** 1 MΩ
- **Output impedance:** 470 Ω
- **Max. input:** +8 dBu
- **Power:** 9V DC, center negative
- **Current:** 200 mA
- **Dimensions:** 3.1″ x 4.75″ × 2.5″
- **Weight:** 0.73 lbs.

EXPRESSION PEDAL

Use a pedal with a 10-25 kQ linear pot.

Can be assigned to multiple knobs:

- Hold right footswitch while plugging in exp.
- Move to heel position, adjust knobs.
- Move to toe position, adjust knobs.
- Hold right footswitch for 2 seconds to save.

Default assignment is the MIX control.

RESOURCES

- **Getting started videos:** www.redpandalab.com/rtfm
- **Owner's manual:** www.redpandalab.com/downloads
- **Firmware updates:** www.redpandalab.com/downloads
- **Web-based editor:** www.redpandalab.com/web-editor

WARRANTY

For one (1) year following the date of purchase, Red Panda, LLC will repair or replace, in its sole discretion, the Product, in order to correct defects in material or workmanship that existed when the Product was purchased

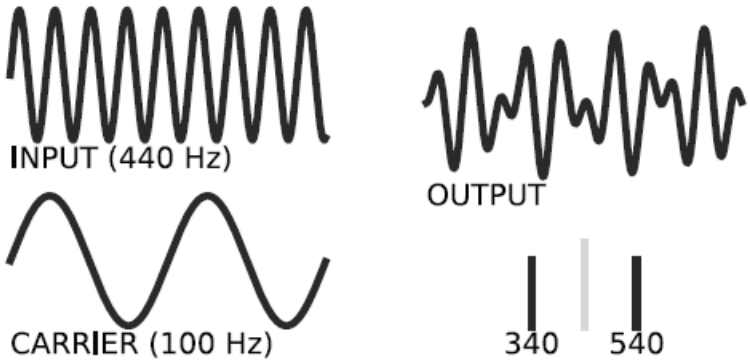
(collectively, “Manufacturing Defects”. For purposes of this Limited Warranty, “Manufacturing Defects” includes only defects in the Product at the time of purchase and does not include normal wear and tear, modification post-sale, misuse, accidental damage or destruction, or other abuse occurring after purchase.

See Owner’s Manual for complete warranty.

USING INSTRUCTIONS

RING MODULATION

- Ring modulation is a type of amplitude modulation that combines two signals to create new frequencies. The first is your instrument signal, and the second is an internal carrier oscillator.
- The output contains the sum and difference of the frequencies present in the original signals.



- The settings in the diagram will give you a basic ring mod sound. Adjust the MIX control to balance the clean signal and ring mod. Adjust the FREQ control to change the carrier oscillator frequency for dissonant and bell-like sounds. The SHIFT 2X control will change the frequency ratio of the upper and lower sidebands.
- Setting the RANGE control to the up position will quantize the FREQ control, making it easier to dial in musical sounds. Setting the RANGE control to the down position will lower the carrier frequency for tremolo sounds. FREQ and MIX control the tremolo rate and depth.

FREQUENCY SHIFTING

Frequency shifting adds or subtracts the carrier oscillator frequency from each frequency in the input, resulting in only the upper or lower sideband. Each harmonic is shifted up and down by the frequency of the carrier oscillator, altering their pitch relationship differently for each note.

- Start from the ring mod setting in the diagram.
- The RING MOD / FREQ SHIFT control adjusts the levels of the upper and lower sidebands, to blend between frequency shifting and ring modulation.

- Frequency shifting can alter the harmonics of your instrument for FM-like bass and electric piano sounds, and turn natural sounds into otherworldly soundscapes.
- With the RANGE control in the down position, the small frequency shifts will create phasing sounds. Start with MIX at 50%.

MODULATION

- Press the WAVE button to select from four LFO waveforms, a step modulator, two x-mod waveforms, and an envelope follower. The LEDs match the green and orange icons.
- The X-mod waveforms create sweeping spectral changes and endless glissando.
- Press and hold the WAVE button to enable envelope triggering for most waveforms.

STEP MODULATOR

To record a step modulator pattern:

1. Select the step modulator 
2. Hold the STEP button until the LED turns red, then release to enter step record mode
3. Adjust the AMOUNT control to set the level at each step
4. Press the STEP button to advance to the next step in the sequence
5. To finish writing the pattern, hold the STEP button until the LED blinks green
6. Set the AMOUNT knob to its maximum to play the modulation sequence at full scale

PITCH TRACKING

- Pitch tracking maintains the pitch ratio as you play up and down the scale (monophonic).
- The TRACK control sets the carrier oscillator pitch tracking amount from – 100% to + 100%, relative to middle C. +100% tracking helps keep the sound more consistent between notes. Negative pitch tracking accentuates the effect on lower notes.
- Hold the left footswitch and play a note to tune the carrier oscillator to that frequency.

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 for two seconds to store the current settings in that location. The LED will blink green. 100 presets are available via MIDI. To save a preset, hold down the PRESET button while sending a MIDI program change.

Documents / Resources

	Red Panda Lab CTRL BitMap 2 Bitcrusher Effects Pedal at Juno Records [pdf] User Manual CTRL BitMap 2 Bitcrusher Effects Pedal at Juno Records, CTRL, BitMap 2 Bitcrusher Effects Pedal at Juno Records, 2 Bitcrusher Effects Pedal at Juno Records, Bitcrusher Effects Pedal at Juno Records, Effects Pedal at Juno Records, Pedal at Juno Records, Juno Records, Records

References

- User Manual