

## CRITTER & GUITARI™ - Bolsa Bass Manual

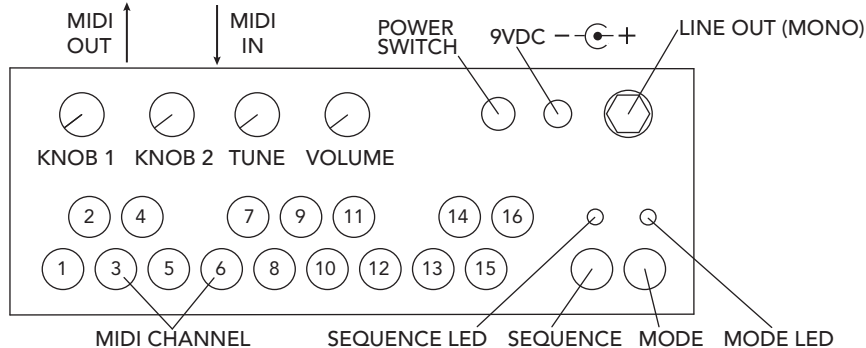
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The Critter & Guitari Bolsa Bass is a monophonic bass synthesizer. It has six synthesizer modes that provide a variety of bass sounds. The Bolsa Bass also features a built-in sequencer and MIDI capabilities.

To use it:

- Connect a power supply (9VDC, minimum 300mA, center-positive polarity, 2.1mm barrel) or insert a 9V battery.
- Turn it on using the power button
- Use the mode button find the mode you want to hear
- Adjust knobs to obtain your desired sound

### Diagram & Description



### 16 Keys

The Bolsa Bass has 16 keys for playing melodies which gives you 1 octave + 4 notes. The range can be extended using an external MIDI controller. The keys are not pressure sensitive, but they are aware of how long they are pressed. When tapped quickly, the note will release quickly giving more of a percussive sound. If the key is held for longer, the note releases slowly. This gives a sound more like a plucked string.

### Volume Knob

This knob controls the overall output of the synthesizer. This knob is hardwired to the output jack, so it does not participate in the sequencing fun. (The other 3 knobs can be recorded, see the sequencing section below.)

### Tuning Knob

The Bolsa Bass can be tuned over a 1 octave range. When turned all the way to the left, the bottom key 'C' is a C2 (65.402 Hz). Turning the knob all the way to right raises the bottom key to C3 (130.804 Hz). The MIDI output is not affected by this knob.

## Knobs 1 & 2

These knobs control parameters in the synthesizer's six modes. Their function is described below.

## MODES

The Bolsa Bass has six modes that can be changed using the Mode Key. The Mode LED indicates which mode you have selected. Each mode uses the two knobs differently.

### ● Circle Ramp

Downward ramping pure sine tone.

Knob 1: Ramp speed from very fast (<10 milliseconds) to very slow (1.5 seconds)

Knob 2: Starting point of the downward ramp. All the way to the right is no ramp, all the way to the left is 2 octaves above.

### ● Saw Ramp

Similar to Circle Ramp, but using sawtooth tone. The tone in this mode is actually a summation of a sine wave and sawtooth wave. The added sine wave bulks up the tone for a 'fatter' sound.

Knob 1: Ramp speed from very fast (<10 milliseconds) to very slow (1.5 seconds)

Knob 2: Starting point of the downward ramp. All the way to the right is no ramp, all the way to the left is 2 octaves above.

### ● Analog Style

Classic resonant low-pass filter sound. A sawtooth wave is fed into the filter. The cutoff frequency is keyed to the note being played, so with the resonance turned up its possible to emphasize specific harmonics in each note played.

Knob 1: Cutoff frequency, relative to the note being played.

Knob 2: Resonance

### ● Sweep Filter

Similar analog low-pass filter sound, but with a downward sweeping filter envelope.

Knob 1: Envelope time, from 10 milliseconds to 4 seconds.

Knob 2: Resonance

### ● FM Pad

Dual oscillator FM synthesizer. Two frequency modulated oscillators are added together. The harmonicity of each oscillator is controlled from a low frequency oscillator (LFO). The frequency of the second FM oscillator is offset to provide further phasing in the harmonics of the note played.

Knob 1: LFO rate and oscillator frequency offset. Turning this knob up increases the rate of the phasing effect. Turn it all the way down to stop the oscillation.

Knob 2: Index of modulation. Turn this knob up to add more high frequency harmonics into the sound.

### ● Bass Delay

Tuned delay line. A quick impulse is fed through a delay line with controllable feedback and delay time. The delay time is relative to the note being played which makes a string like sound.

Knob 1: Delay Time. Turn this knob all the way down to set the delay time equal to the period of the note being played.

Knob 2: Feedback. Turn this all the way up to sustain the note indefinitely.

## SEQUENCER

The Bolsa Bass has a built-in sequencer capable of recording as many as 256 notes or for as long as 90 seconds (whichever comes first). Only one sequence can be stored in memory at one time.

### To Record a Sequence:

- Press and hold SEQUENCE button until SEQUENCE LED flashes red (●○●).
- Play a note to begin recording. SEQUENCE LED changes to steady red (●●●). Adjustments to KNOB 1, 2, and TUNE are recorded too.
- Press SEQUENCE button to end recording. Playback begins immediately and LED changes to steady green (●●●).
- To start or stop playback, press SEQUENCE. Sequence playback always starts from its beginning.

### Interesting Facts:

- During playback, adjustments to KNOB 1, 2, or TUNE override the recorded values for that knob.
- Any notes played during playback will mute notes in a sequence.
- Sequences recorded in one mode can be played in other modes

## MIDI INFO

The Bolsa Bass sends and receives MIDI note, MIDI clock, and MIDI start/stop commands. It can be used as a stand alone controller, sound module, or a sequencer. Looking at the synthesizer from the top, MIDI OUT is the jack on the left, MIDI IN is the jack on the right (the innermost jack).

### MIDI Channel Select

The Bolsa Bass sends and receives MIDI notes on CH 1 by default. To change send & receive channel (1-16), hold down corresponding key during power up. The lowest note on the keyboard is CH 1, the highest note is CH 16. Please see the control surface diagram above for more information about the MIDI channel assigned to each key. Note: The Bolsa Bass will return to the default behavior of receiving CH 1 if turned off and no other key is held down during power up.

### Note Commands

The Bolsa Bass responds to all notes on the selected channel, so using an external keyboard allows for a much larger note range than the built-in keyboard. Any note received on the selected channel is also passed to the MIDI output.

The keyboard on the Bolsa Bass starts at MIDI at note 36 (C2). Any notes pressed on the keyboard are sent out as MIDI on the selected channel.

### Clock

Many synthesizers, drum machines, and sequencers use MIDI clock to synchronize events. MIDI clock messages occur at 24 pulses or ticks per quarter note. The Bolsa Bass receives these MIDI clock messages. If no MIDI input is connected, the Bolsa Bass will use its internal MIDI clock for the sequencer. If a MIDI input is connected, and there is MIDI clock present, the Bolsa Bass will latch onto that clock and disable its internal clock. The mode LED will flash briefly at each quarter note if a MIDI clock input is present. Any MIDI clock received is passed directly thru to the MIDI output for syncing other devices.

### Start/Stop Commands

The Bolsa Bass' sequencer also responds to MIDI start and stop commands so it can be controlled externally. For example, if a drum machine is connected to the MIDI input, starting the drum sequencer will also start the Bolsa Bass' sequencer.

When the sequencer on the Bolsa Bass is started or stopped (either by pressing the button on the Bolsa Bass, or externally from a MIDI device), a MIDI start or stop command is sent out so that other downstream devices may be synchronized.

Thanks for being a part of Bolsa Bass and we hope you have fun! Feel free to let us know how you use it - we are always curious! Click on the links below to get in touch with us:

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