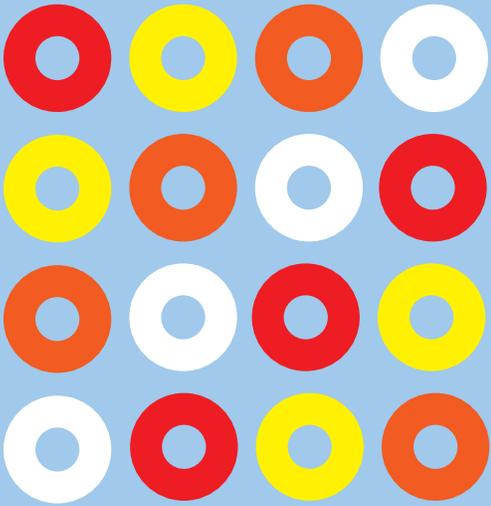
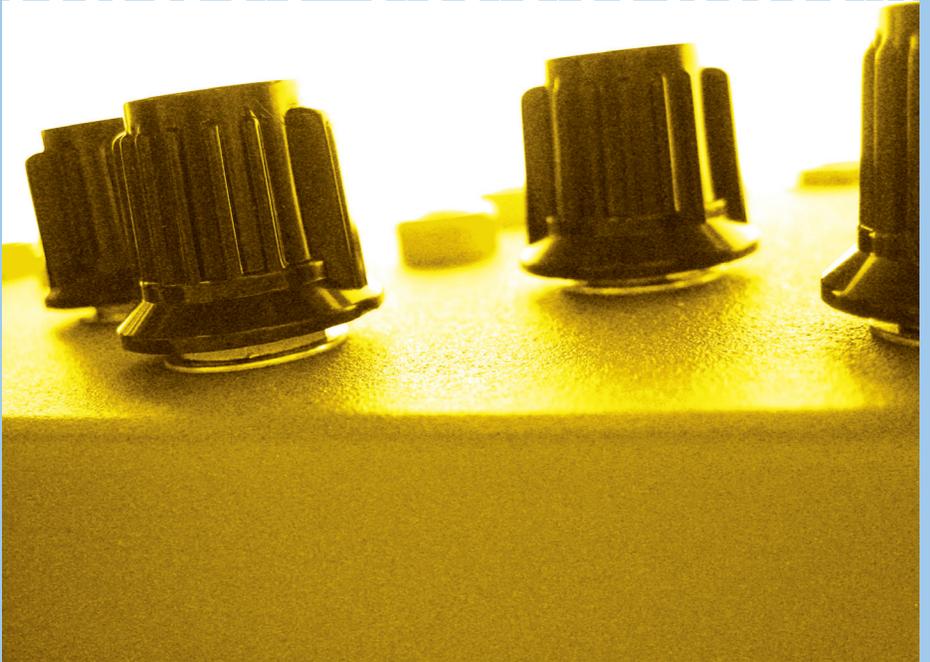


flower electronics



Little Boy Blue
Manual & Tutorial



Part I: What is Little Boy Blue?

Congratulations on your Little Boy Blue!

*a rugged
synthesizer
designed with
the
touring
musician
in mind*



- Two voltage-controlled oscillators
- Preamp and envelope follower
- Intermodulating output stage
- Can generate sound, or process external signal
- Runs on one 9v battery
- Power is disconnected when output cable is unplugged
- The Little Boy Blue comes with a set of 7 banana patch cables. Output and external input are via standard 1/4" connectors.

Part II: How Does LBB Work?

LEFT TO RIGHT:

Preamp with variable gain:

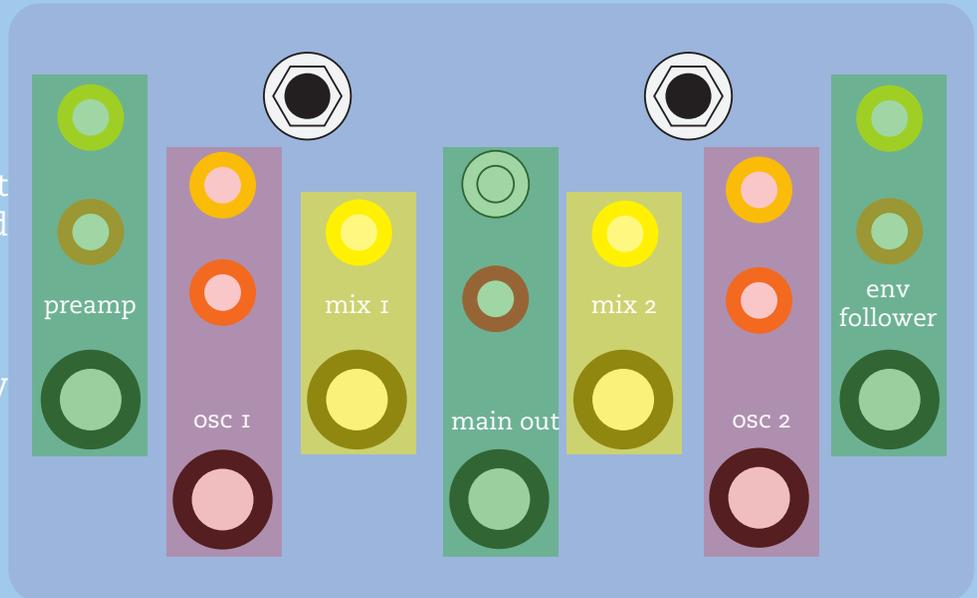
yellow jack: input
left 1/4" jack: input
(those two are connected together)
orange jack: output
knob: gain
gain range is approximately unity to x10 (0 to +20 dB)

Oscillator 1:

yellow: control voltage in
orange: oscillator out
knob: frequency
frequency range is approximately 1 Hz to 6 kHz
control characteristic is exponential (not intended for critical pitch tracking applications)

Output stage:

left yellow: mix 1
white: insert (goes directly to master volume – no separate gain control)
red: main output
right yellow: mix 2
left 1/4" jack: main output (directly connected to red)
left knob: gain for mix 1
middle knob: master volume (note: the master volume is eccentric. Volume is loudest at approximately two-third's range, and the signal will be clipped to nothing at either extreme.)



right knob: gain for mix 2

The red output jack is for making feedback patches. (See section 4)

The LBB puts out a very hot signal. Start out with the amplifier volume very low. If using LBB with a mixer, keep the input trim at its lowest gain setting.

Oscillator 2 (same as osc 1)

Envelope follower:

Yellow: input

Orange: output

Knob: optional attenuator

The envelope follower turns an audio signal into a control voltage. The knob can invert the control voltage when it's to the left, or pass it normally when it's to the right. In the middle, there's no output. You can think of it as a bidirectional volume control.

Part III: How to Make a Sound

Example 1: Basic FM

Main out to amplifier

Osc 1 out to mix 1

Osc 2 out to osc 1 cv in

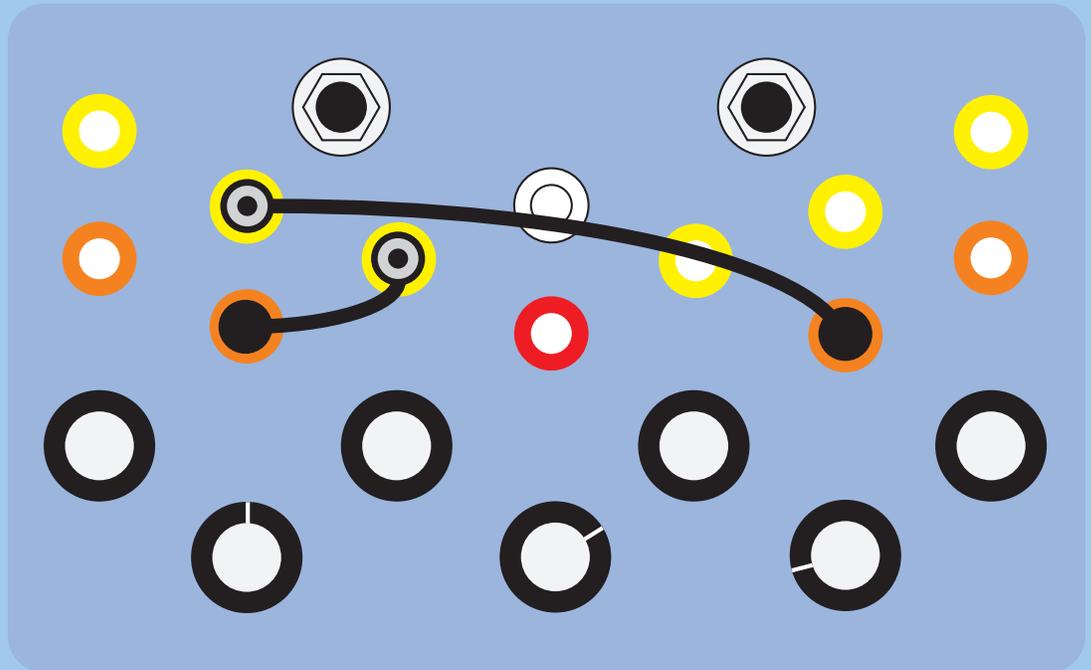
Set master volume to 2:00 o'clock

Set osc 1 frequency to 12:00 o'clock

Set osc 2 frequency to 8:30 o'clock

Turn up mix 1 level until you hear a sound in the speaker (note: if it's too quiet, adjust the master volume to the loudest point of its range)

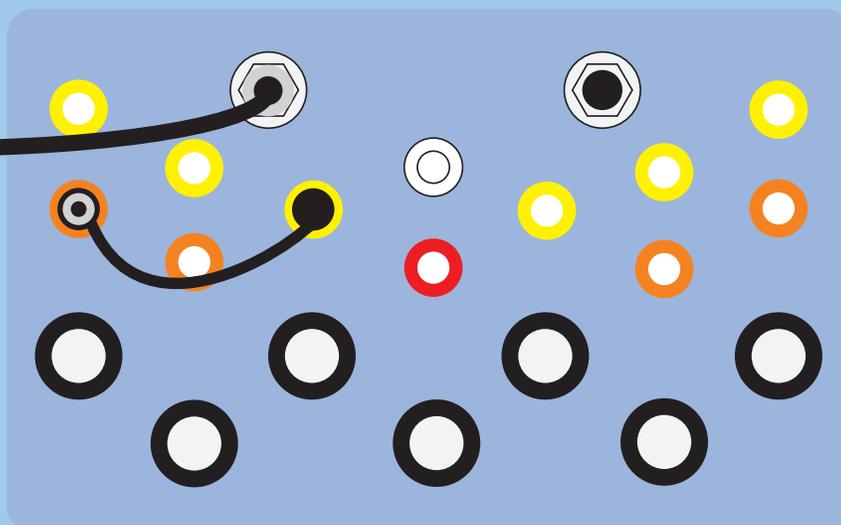
You should hear a warbling sound in the speaker. Osc 2 is controlling the pitch of osc 1. As you turn up the frequency of osc 2, the sound will become continuous and discordant. This is called frequency modulation.



Experiment with different settings of the two oscillator pitch controls, and the master volume. The tone you hear is a complex function of the pitches of the two oscillators, and the distorting effect of the master volume further alters the harmonic content. You'll hear a wide range of clangorous tones.

Congratulations! You made your first sound with the LBB.

Example 2: External Input



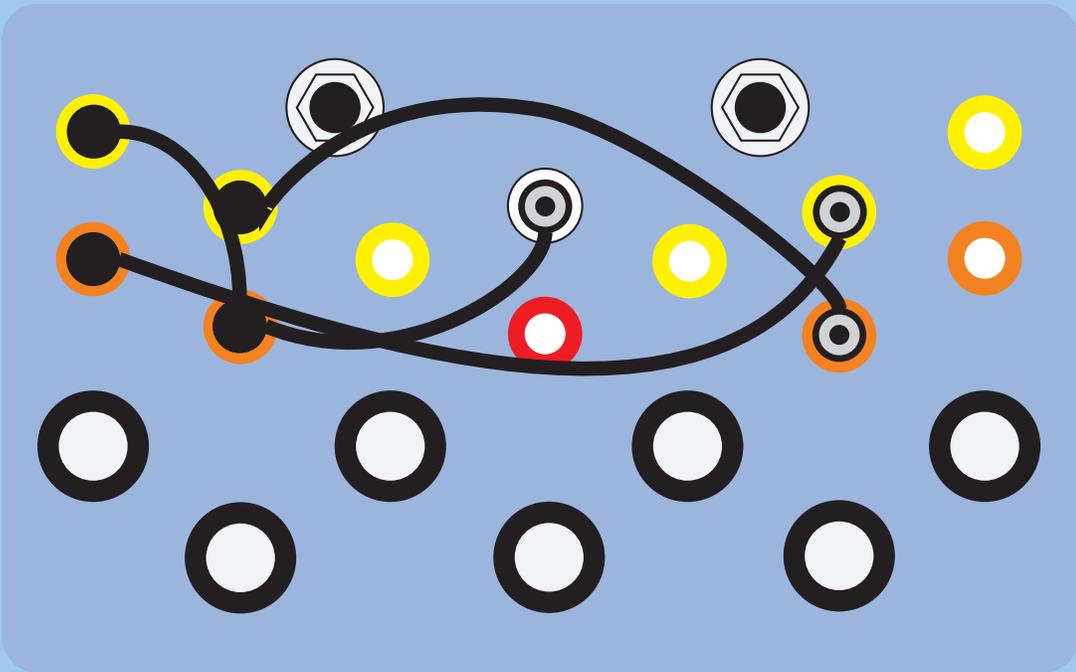
Microphone or guitar to left 1/4" jack (note: may need to use a preamp or boost pedal first)

Preamp out to mix 1

Adjust mix 1 and master

Part IV: More Complex Patches

After you get used to the basic patches, you can try some more complicated ones. These examples are just some ideas to get you started. The most important thing is to try a lot of different combinations, and don't be discouraged if you don't find what you want right away. Because when you do find the magic spots, it makes it all worth it!



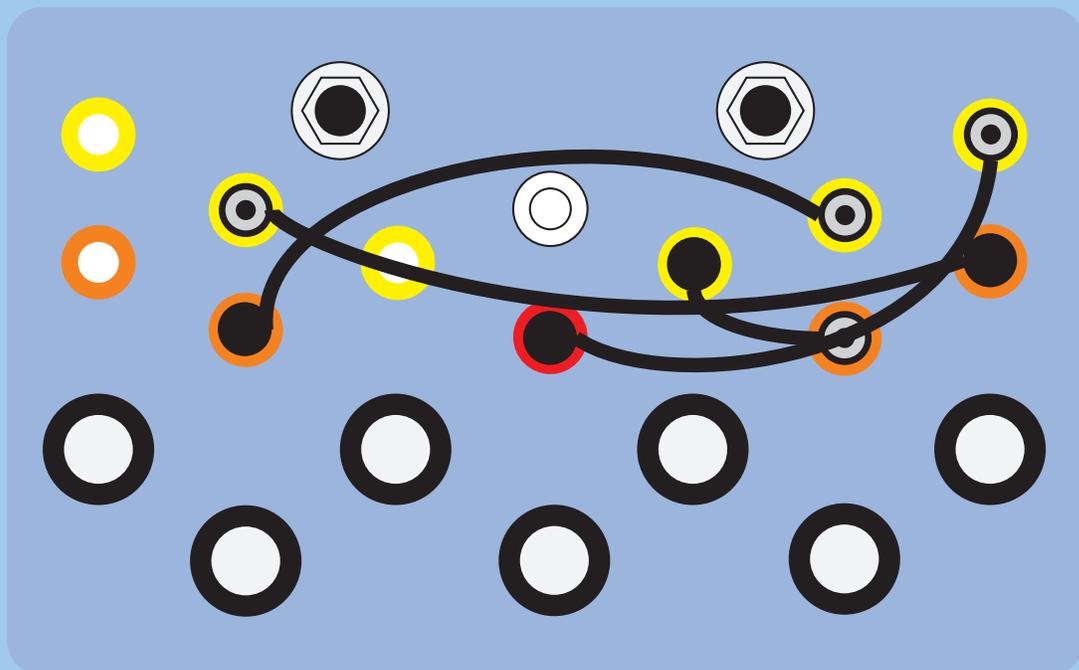
Example 1: Osc 1 to preamp input
 Osc 1 to insert
 Preamp out to osc 2 cv
 Osc 2 to Osc 1 cv

This patch does a lot of weird frequency locking and division. Sometimes it sounds like the solo in a Lighting Bolt song!

Example 2: Osc 1 to osc 2 cv
 Osc 2 to mix 2

Main out to envelope follower in
 Envelope out to osc 1 cv

I had the envelope follower all the way down and I was getting some weird footsteps running in and out. Kind of like that ghost movie I watched last night!

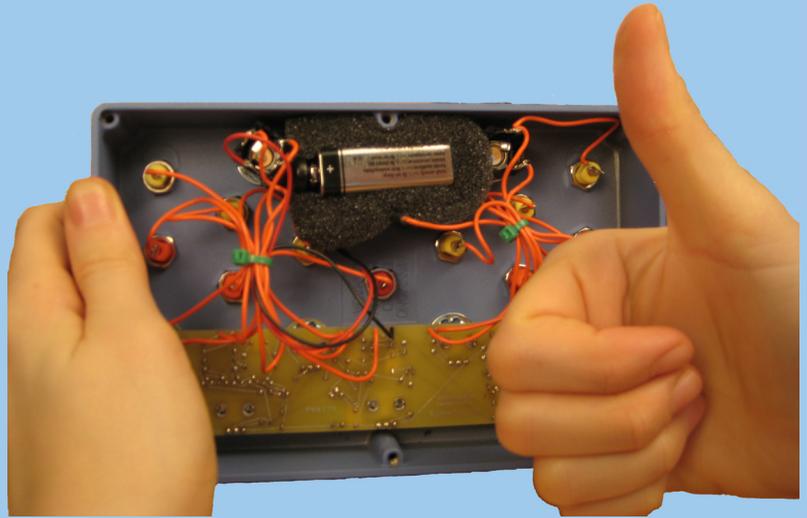




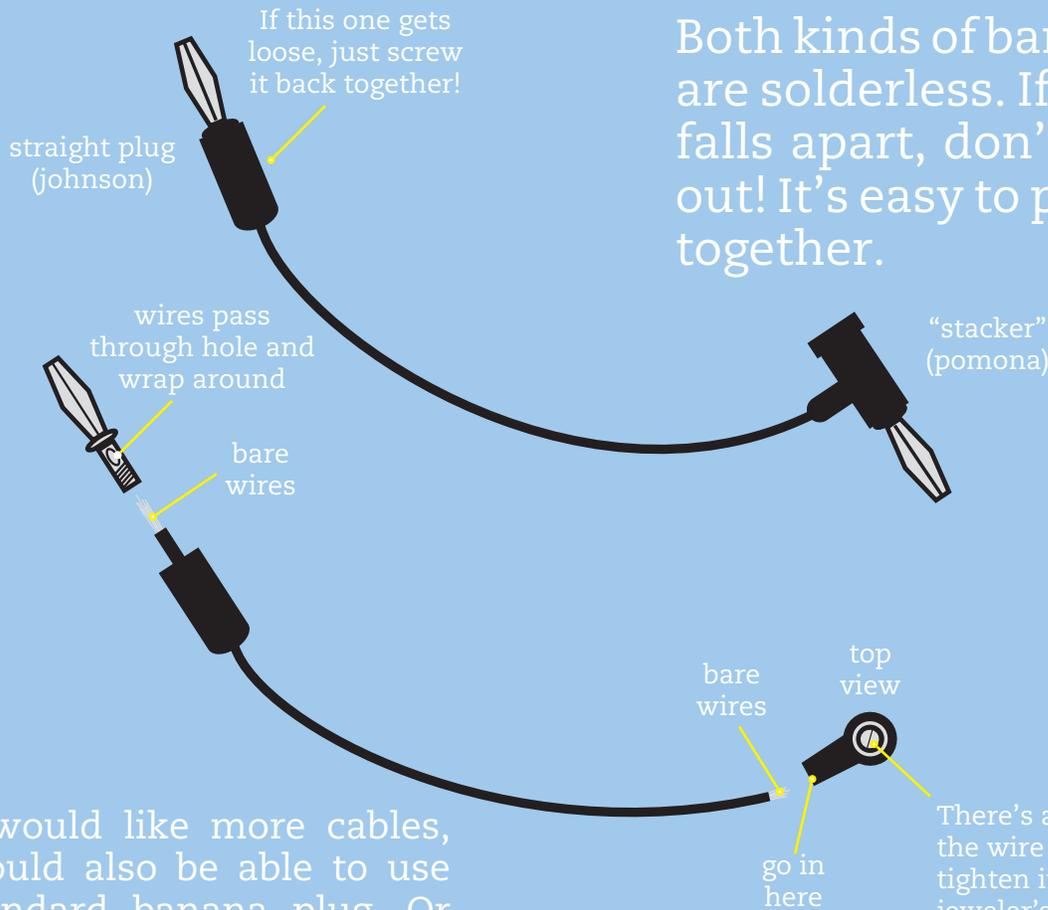
Part V: Care and Feeding of Little Boy Blue

Changing the Battery

The Little Boy Blue was designed with reliability in mind. The only regular maintenance it should need is to change the battery. The LBB will let you know when it's getting weak, because the oscillators won't go as high and the sound will get dull and listless. Remove the six screws on the bottom of the case, exchange the dead battery for a new one, wrap the foam around the battery, and put it back in place as shown. Now you're good to go!



Repairing the Banana Cables



Both kinds of banana plug are solderless. If the cable falls apart, don't throw it out! It's easy to put it back together.

If you would like more cables, you should also be able to use any standard banana plug. Or you can make your own!

There's a set screw to hold the wire in place. You can tighten it with a flat-blade jeweler's screwdriver (3mm is good).