Serpentine Bus User Manual

LOOMIA
0.1” Straight Bus: The straight 4-wire bus has 4 leads that are each 0.1” wide. Each “wire” is low resistance, giving you fast data speed and solid wattage without heating up. Each bus is twistable, drapable, and bendable for all soft circuit needs. The bus can be easily soldered to the S-curve bus or C-Curve bus to make different shaped traces for wearable tech applications.

0.1” S-Curve Bus: The S-Curve bus is perfect for when you need to make an unusual geometry from LOOMIA’s LEL buses. You can combine two to make a big C-curve to go around an elbow, or just use one to route wiring where you need it for soft robotics or for an installation.

0.1” Serpentine Bus: This serpentine has 0.1” traces making it compatible with our S-Curve and C-Curve samples. Use this bus for additional stretch as it has up to 20% elongation. We suggest this bus for wearable tech applications.

0.1” C-Curve Bus: The C-Curve bus is perfect for connecting two 0.1” buses together at a wide angle. Try using this part for creating conductive lines over shoulders or over large surface areas.
**Serpentine Bus (7-Coil)**

- Bend Radius Limitation: None
- Thickness: Approx, 10 mils
- Max Current Per Trace: 1A
- Component Dimensions: 3” x 10”
- Resistance Per Trace: < 5 ohm
- Elongation: TBD

**Serpentine Bus (5-Coil)**

- Bend Radius Limitation: None
- Thickness: Approx, 10 mils
- Max Current Per Trace: 1A
- Component Dimensions: 3” x 10”
- Resistance Per Trace: < 5 ohm
- Elongation: TBD
CONNECTING:
Alligator Clips

You can easily connect to any LOOMIA Part using alligator clips. Simply clip directly to the exposed pad to get a good connection.

This technique works well for experimentation where you are still broadly testing a circuit.

CONNECTING:
Headers

All LOOMIA Parts can be easily soldered to standard pitch headers. Simply solder them in to the bottom of the interconnect for easy breadboarding and attachments. Repetitive stress can break the interconnect, so this technique is best when your circuit is more settled. Do not use the component as a lever for removal from the breadboard - remove components by the headers, not the LEL portion.
CONNECTING LEL PARTS

If you wish to connect the two LEL parts together, this can be done by trimming and soldering the connector. Don’t be intimidated by trimming the connector, you’ll master it quickly. We’ve designed the connector to match up and create pill shapes with other LEL parts. These pills can help you keep track of each lead’s connection.

Line up two buses or a bus and a component with the same pitch traces.

Trim off the bottom of the interconnect using standard scissors.

Line up the Parts to create a complete pill shape and peel back the adhesive backing of the Part that will go on top.

Solder across the pads to create a joint.
1. Remove one of the backings, the side that **does not** have the LOOMIA logo.

2. Prepare the chosen fabric surface that the serpentine will be placed over by ironing out any wrinkles.

3. Position the serpentine on the fabric. Make sure the side with the LOOMIA logo on the interconnect is facing up. This facing up side should still have the backing attached.

4. Place a sheet of nonstick paper over the serpentine bus before ironing.

5. Iron over the serpentine lightly for 15-30 seconds at a setting between 275-300F. If using a lower setting, increase ironing time and hold over each section a little longer.

6. Let this cool. Then remove the non-stick paper.
How to Apply the Serpentine onto Fabric, Continued

7. Make sure the serpentine is stuck to the material. If not, repeat steps 4-6 again.

8. Wait for the serpentine to **completely cool down**. Then carefully remove the backing.

9. The serpentine should be attached onto the fabric and should look something like this. If a more integrated look is desired, move to the next steps.

10. Place the nonstick sheet back on top of the serpentine and repeat steps 5-6 again.

11. Wait for the serpentine to **completely cool down**. Then carefully remove the nonstick sheet.

12. Repeat the ironing process until the serpentine looks more integrated. By the end it should look more clear (photo above) compared to the photo in step 9.