

Building the Conductive Keyboard

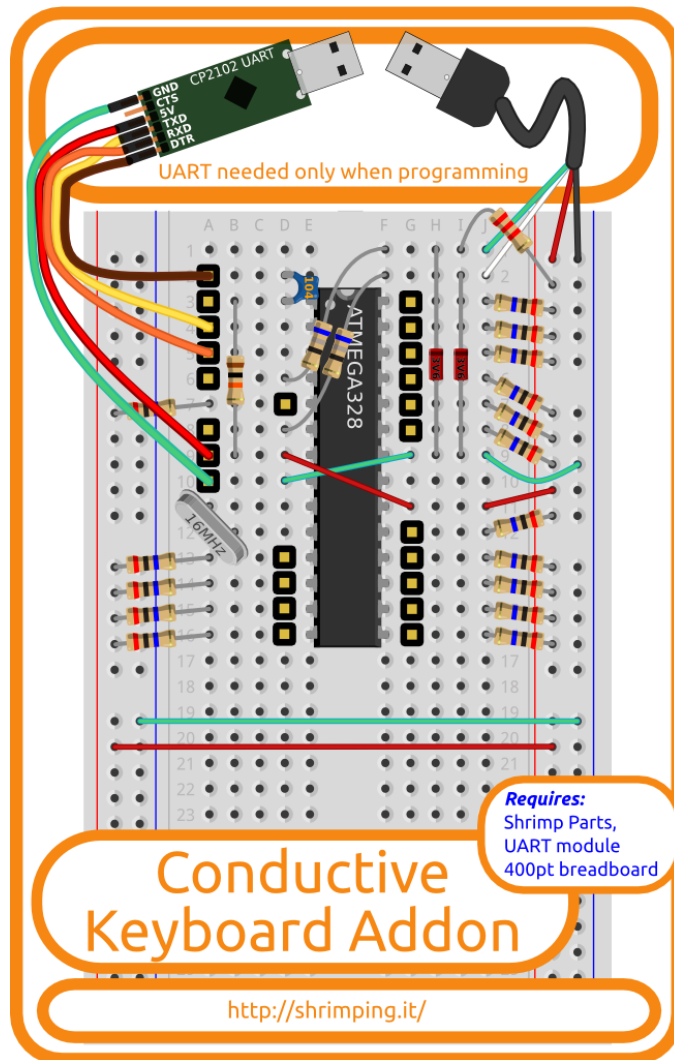


Figure 1: Conductive Keyboard Kit cover

This guide provides details for learners to wire, program and configure a @ShrimpingIt conductive keyboard.

For orientation, see the [Conductive Keyboard](http://shrimping.it/) project page.

Requirements

The build assumes you have the following kits...

- A [Conductive Keyboard Addon](#) kit
- A [Shrimp Parts](#) kit
- A [Programmer](#) kit

For convenience, pre-bagged kits are available to order from @ShrimpingIt online. If you do not wish to buy from us, information is provided for you to source commodity parts direct from electronics wholesalers.

In addition you will need a Linux, Mac or Windows computer running the latest [Arduino IDE](#).

Mac and Windows computers need a [CP2102 driver](#) to be installed for the USB Programmer to be recognised.

Getting started

Before embarking on the Conductive Keyboard, you should have **successfully completed the [Blink build](#)**. This build uses the Blink circuit as its starting point.

Step 1: Remove unnecessary parts

You can remove the Blink LED and resistor as these are not used in the circuit, and it will be easier to wire the circuit with them out of the way.

Step 2: Connect Right-hand Power Rails

We will be using

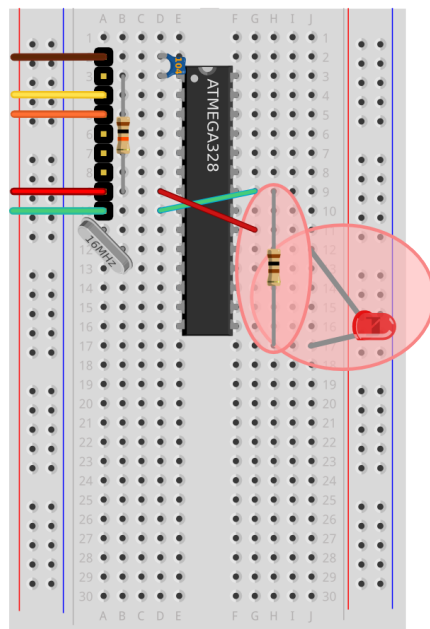


Figure 2: Blink Layout

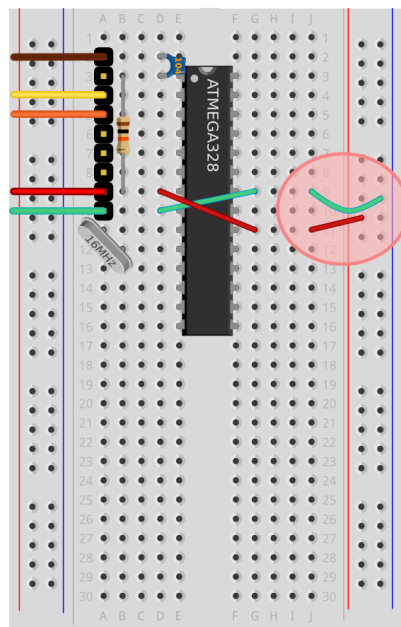


Figure 3: Connecting power rails

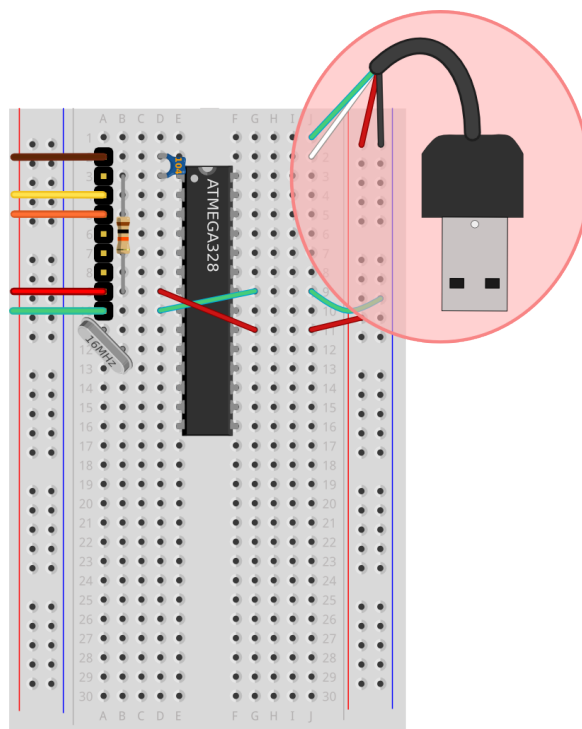


Figure 4: Hacked USB Cable

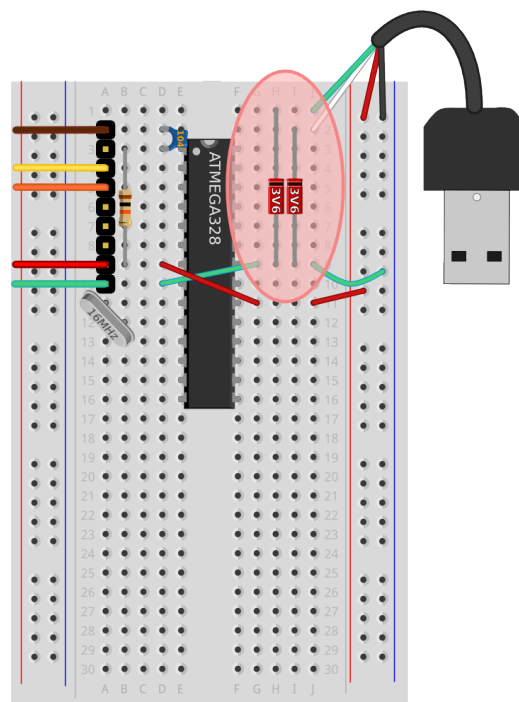


Figure 5:

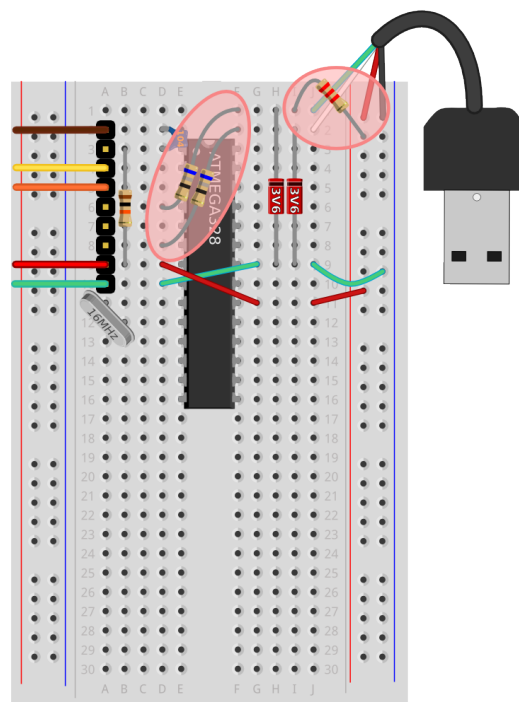


Figure 6:

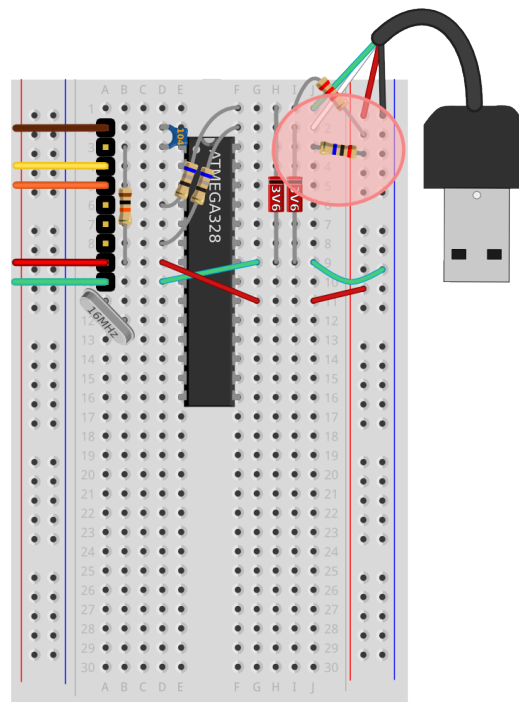


Figure 7: Pullup Resistor #1

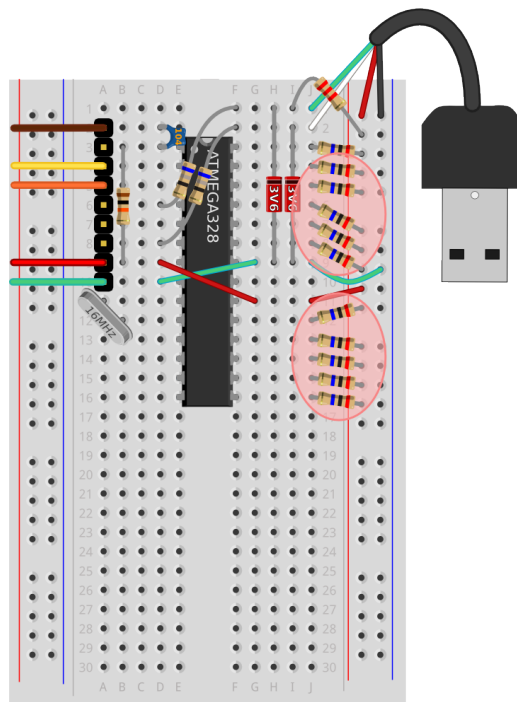


Figure 8: Pullup Resistors #2 to #15

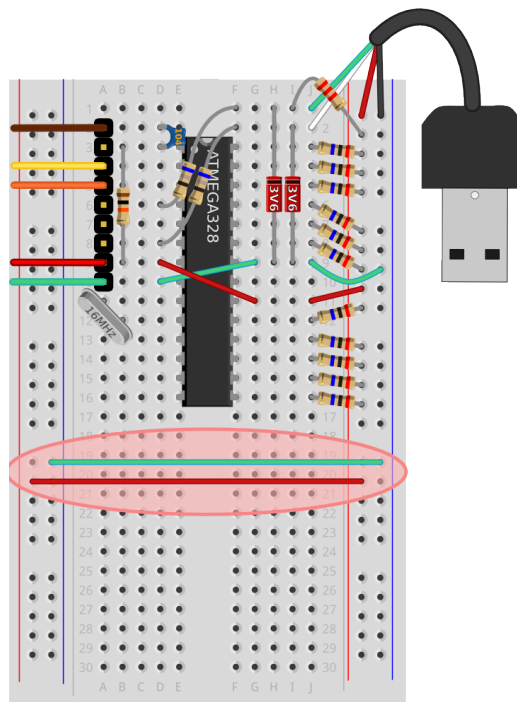


Figure 9: Connecting Left Power Rails

Step 3: A hacked USB cable to connect as a keyboard

Step 4: Regulate USB signal levels with Zener Diodes

Step 5: USB Signalling and Pull-up Resistors

Step 6: Adding a pull-up resistor to test conductive sensing

Step 7: Remaining Right Hand Pullups

Step 8: Connecting the Left Power Rails

Step 9: Accessible Left Hand Pullups

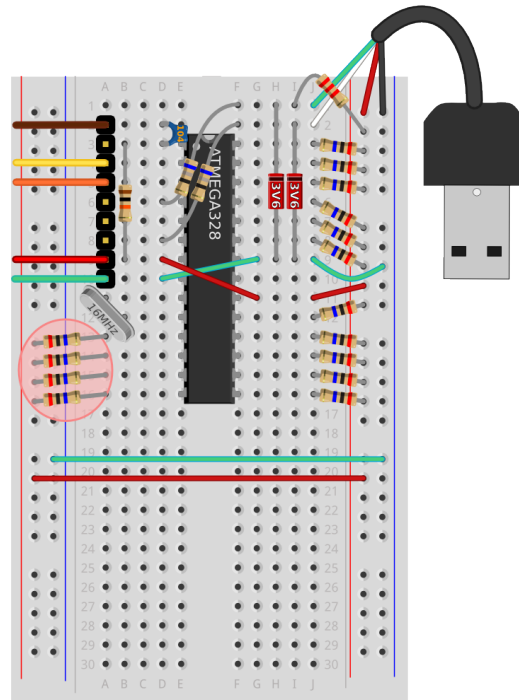


Figure 10: Connecting Left Power Rails

Step 9: Last (bonus) pullup if needed

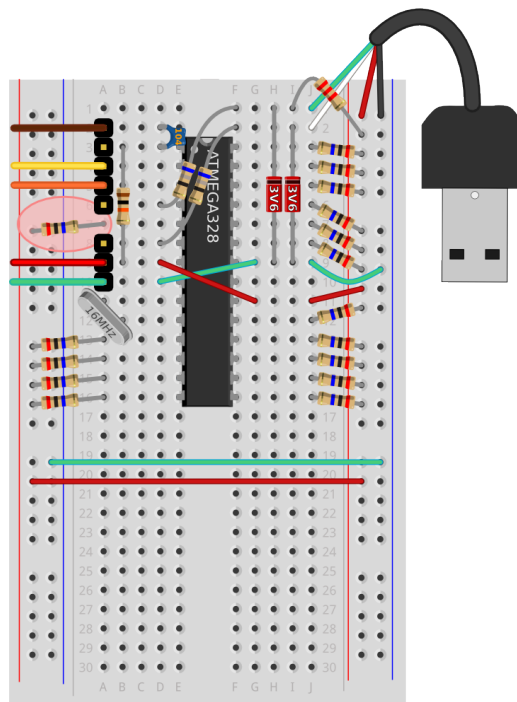


Figure 11: Pullup Resistor #16