
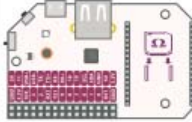


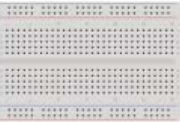




















## What's Included

Your Starter Kit contains the following items; we've labelled them here for your convenience.

# **Onion Omega2 Starter Kit**

 Omega2+	 Expansion Dock	 Wall Charger	 USB Micro-B Cable	 Breadboard
 Jumper Wire M-M x20	 Jumper Wire M-F x20	 LED x20	 100nF Capacitor x5	 100 $\Omega$ Resistor x5
 200 $\Omega$ Resistor x20	 470 $\Omega$ Resistor x5	 1 k $\Omega$ Resistor x5	 5.1 k $\Omega$ Resistor x5	 51 k $\Omega$ Resistor x5
 Push Button x12	 Slide Switch x5	 Digital Temp Sensor	 7-Segment Display	 16x2 LCD Screen
 74HC595 Shift Register				

## How to Use This Guide

Before getting started on the experiments, set up your Omega by following the First Time Setup Guide.

Then you can learn more on:

1. Connecting to the Omega's Command Line
2. An introduction to using the command line
3. Installing the software we need for the experiments

Once you've done those, we recommend working your way through the experiments in order as they usually build on what we've learned in each one.

## What Exactly Will I Learn?

Here's a list of all of the experiments we're going to build with your Kit:

1. Blinking an LED
  - o Learn the basics of programming the Omega by turning an LED on and off.
2. Blinking Multiple LEDs
  - o Learn some more programming concepts by controlling multiple LEDs at once.
3. Fading an LED
  - o Create a cool LED fading effect using the pulse width modulation technique.
4. Reading a Switch
  - o Use a physical switch to control an LED through the Omega.
5. Using a Shift Register
  - o Use a shift register chip to control 8 LEDs using only a few GPIOs.
6. Controlling a Seven-Segment Display
  - o Add a seven-segment display to the previous circuit to display numbers.
7. Reading a 1-Wire Temperature Sensor
  - o Use a 1-Wire temperature sensor to read the ambient temperature.
8. Controlling LCD Screen
  - o Use the I2C protocol to control an LCD screen attached to the previous circuit.