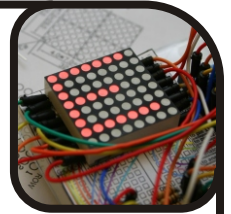
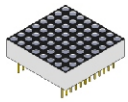


LED Displays (8 x 8 LED Matrix)



The Pieces

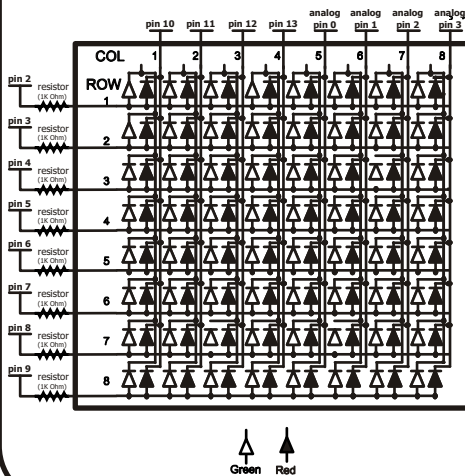


**8 x 8 Bi-Colour
LED Matrix**
(common anode)
x1



1K ohm Resistor
(brown-black-red)
x8

The Schematic



The Theory & Code

LED Matrix

LED Matrix's are great fun, you can create funky patterns, scroll messages, or create something entirely bizarre. Sadly controlling one is a tad complicated. But once mastered is easily repeatable.

∴ A quick refresher on LED control can be found here tinyurl.com/cm5nh ∴

Matrix Wiring

Each matrix has 128 LEDs (64 Red & 64 Green) however there is noticeably not 256 leads. Instead the LEDs are wired into a matrix. This matrix has the LED's anodes connected across rows (8 pins) then the red and green LED's cathodes attached across columns (8 pins each). To light an LED connect it's rows anode to +5volts, and through a resistor, it's columns cathode to ground. (you can try this without a micro-controller)

Displaying Images (Scanning)

Now that we can light any LED we choose it's time to move on to displaying a (small) image. To do this we will use a scan pattern. In the example code we define a bitmap image (an array of 8 bytes, each bit representing one LED). Next we scan through this array one byte at a time, displaying one column then the next. If we do this fast enough (about 1000 times a second) it appears as an image. It sounds complex but if you download the code and play around it should quickly become clear. (play around with the delay times to see the flicker)

Example Code

∴ Code to test your display a test pattern <http://tinyurl.com/yjzokrr> ∴

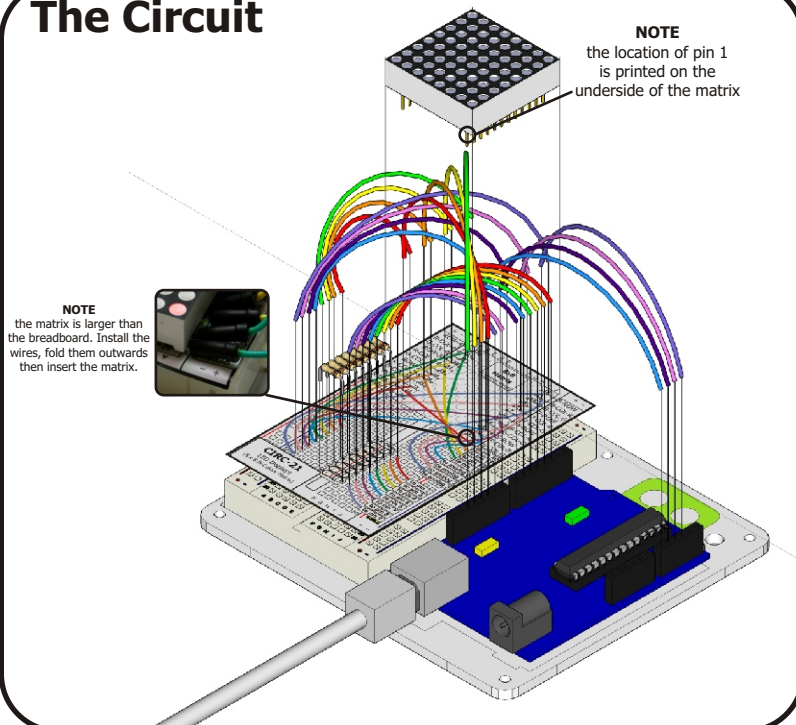
∴ Code to scroll a message across the display <http://tinyurl.com/y13pc28> ∴

More Things to Try

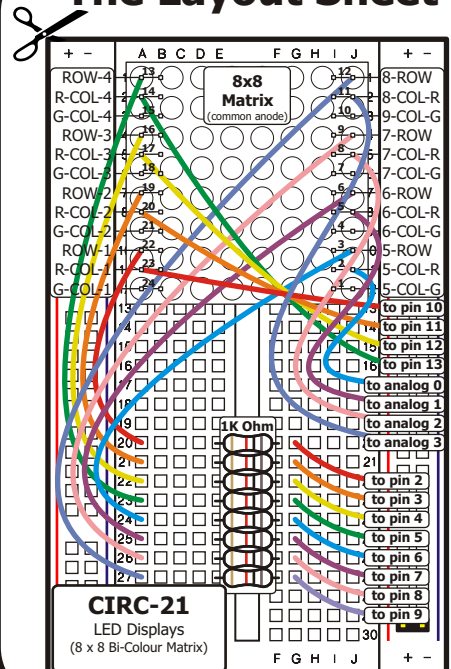
Dislike Red? you can switch to green by shifting the column pins from COL-R to COL-G. Using too many Digital pins? Try controlling the display using shift registers (74HC595) tinyurl.com/l43cph or a dedicated display chip (MAX7219) <http://tinyurl.com/4s2oo7> (arduino.cc)

∴ Full Datasheet & Pinout <http://tinyurl.com/yff4v8u> ∴

The Circuit



The Layout Sheet



∴ **Instructions:** print out, cut out, get making ∴
∴ for more details visit: <http://tinyurl.com/yhwvxv6h> ∴