



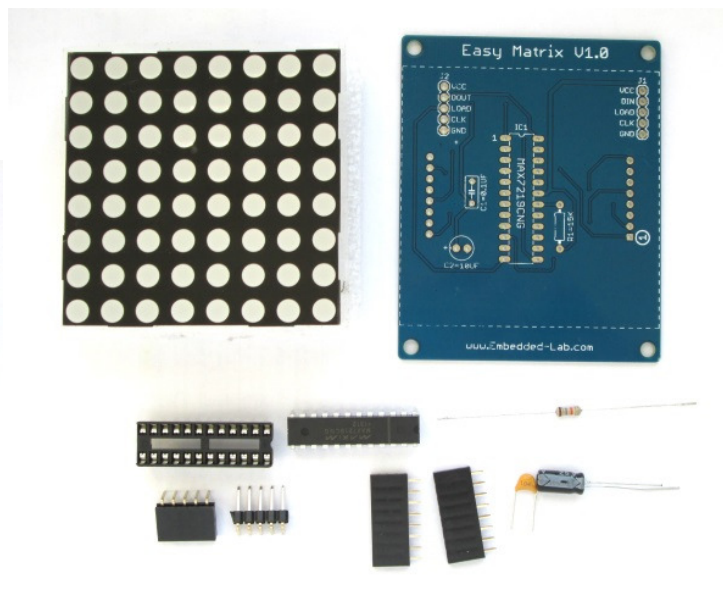
Assembly Instructions – Easy Matrix kit

The Easy Matrix kit contains the following items.

SN	Item	No. of pieces
1	Easy Matrix PCB (2.4"x2.95")	1
2	MAX7219 (24-pin PDIP, IC1)	1
3	24-pin DIP socket	1
4	5-pin male angled header (J1)	1
5	5-pin female angled header (J2)	1
6	8-pin female straight header	2
7	10uF, 25V capacitor (C2)	1
8	100nF, 50V capacitor (C1)	1
9	18K resistor, 0.25W (R1)	1
10	8x8 LED matrix (LM23088A-Red)	1
	Total	11

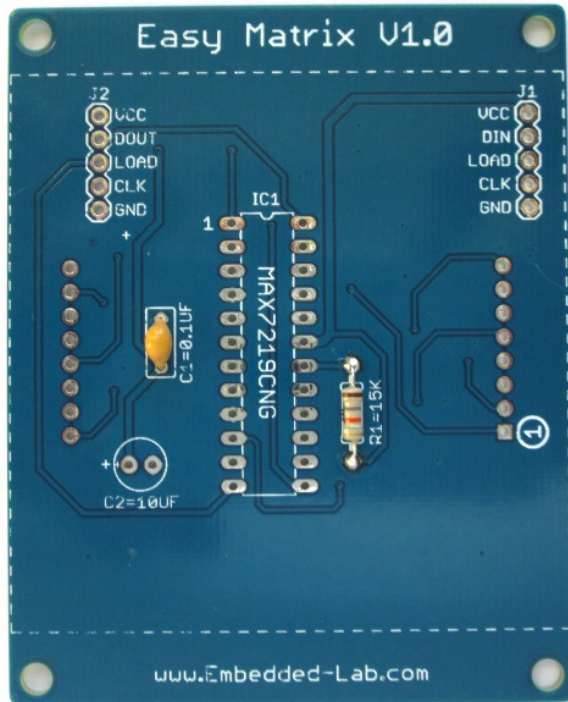
Step 1

Easy Matrix kit comes in an anti-static sealed bag. Open the bag and make sure you have got all the components that are listed above. If you find anything missing, please contact us.



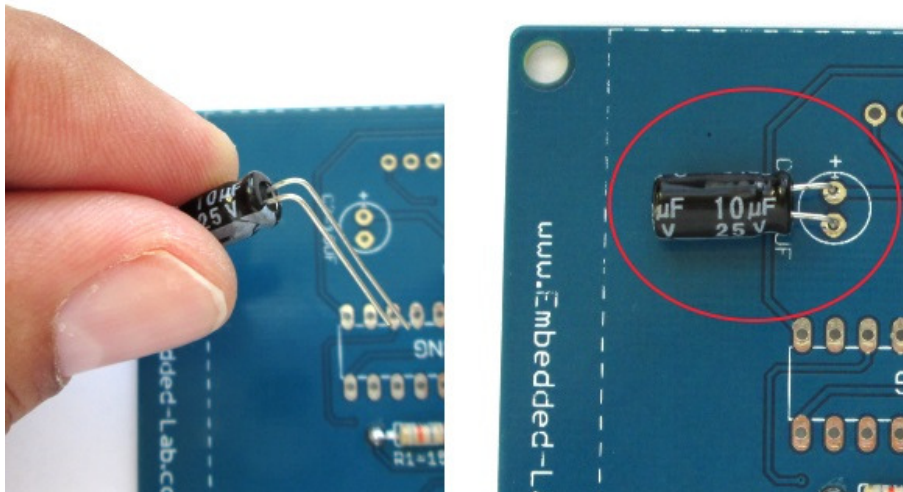
Step 2

Soldering should progress from the lowest to the highest profile parts. So begin with the capacitor C1 and Resistor R1.



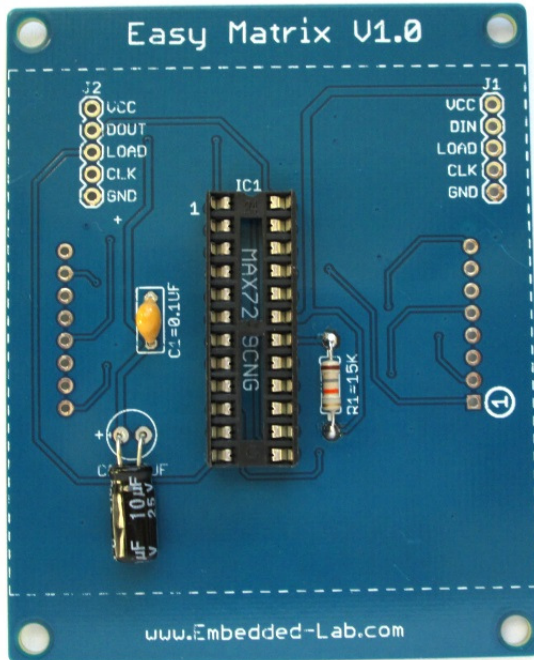
Step 3

Next take the electrolytic capacitor C2 and bend its leads to right-angle so that when it is soldered on the board it will remain horizontal. It is important to keep it horizontal, otherwise it will obstruct to proper plugging of the LED matrix.



Step 4

Next, install the 24-pin DIP socket.



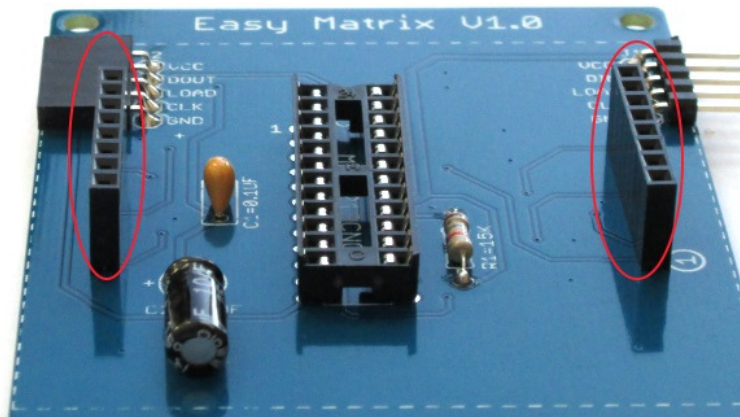
Step 5

In next step, install the right-angled headers J1 and J2. The male header goes on right side and the female on goes on left side. Make sure they are inserted straight and are perfectly aligned to horizontal. Any misalignment could cause some problem during cascading of multiple of these modules. It is recommended to solder just one pin first and see if it aligns perfectly. Solder rest of the pins after you are satisfied with the alignment.



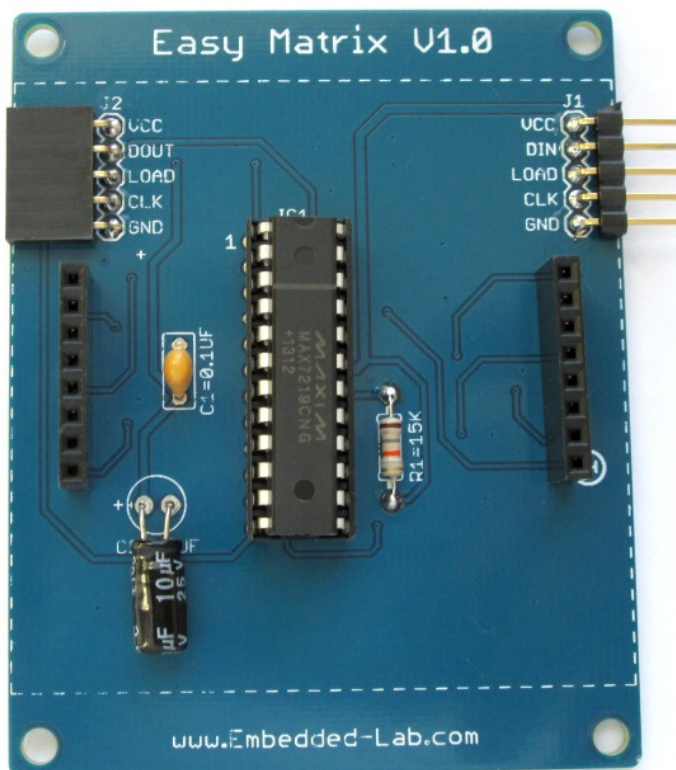
Step 6

Next, install the two 8-pin female headers. Make sure they are aligned perfectly vertical. Again, do not solder all pins at once. After soldering one pin, check if it is going to be straight vertical.



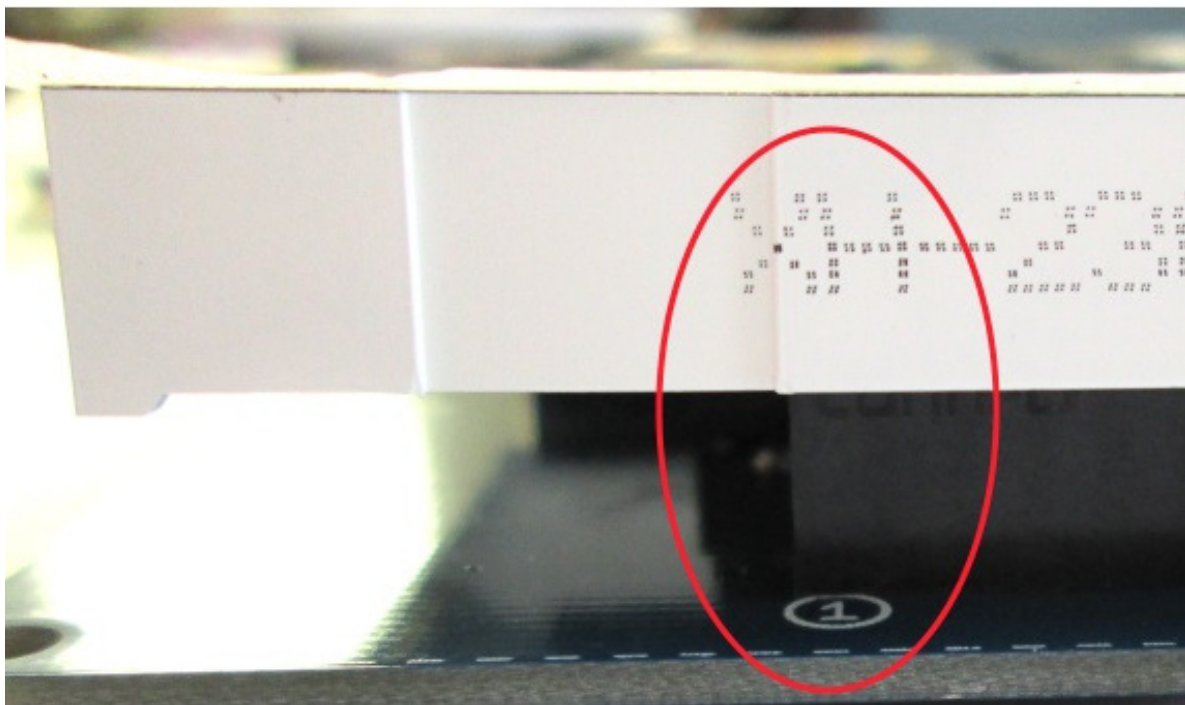
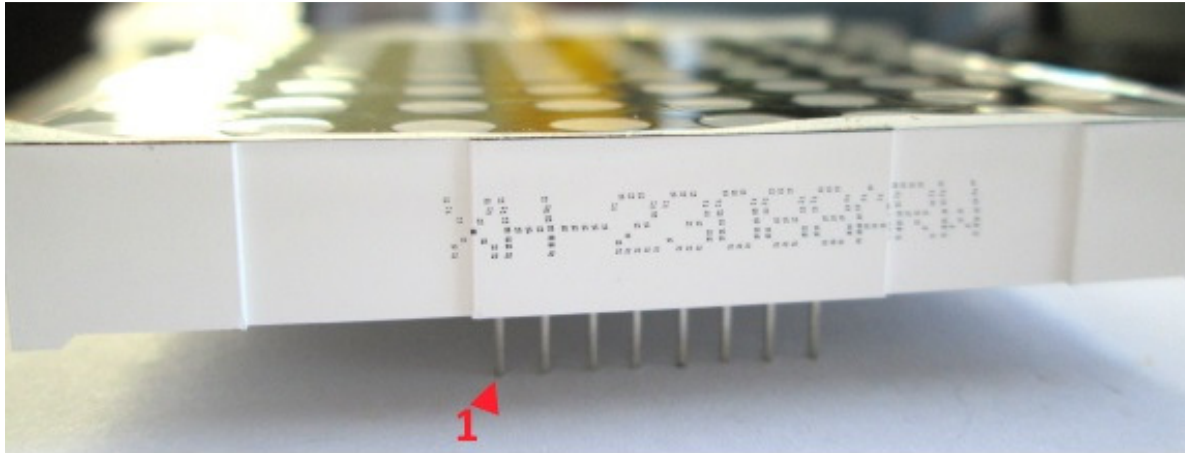
Step 7

Check all the solder joints once again, and insert the MAX7219 chip into the DIP socket. To avoid confusion with the orientation, the pin number 1 of the chip is marked on the PCB.

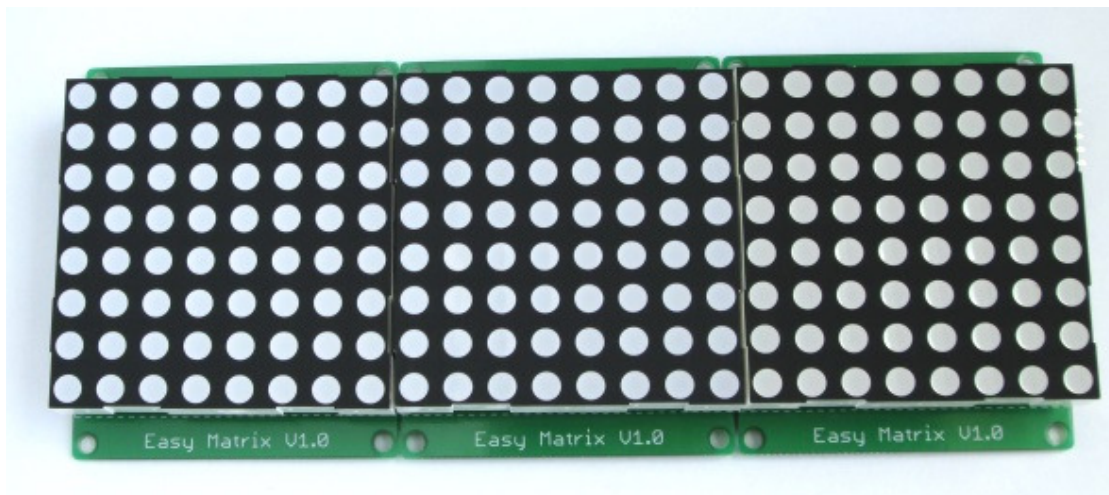


Step 8

At the end, you need to install the LED matrix module. While doing so, make sure that the pin number of the matrix module goes into pin marked with 1 (with a circle) on the PCB. The pin number 1 of the matrix module is the first pin from left on the side where its model number is printed (see the pictures below).



Congratulations! You have successfully built your Easy Matrix module. Continue the same process to assemble other kits. Cascading multiple modules is very easy. The J1 header of the second module plugs into J2 of the first module, J1 of the third module plugs into J2 of the second module, and so on. The data and control signals are fed from the J1 header of the first module, which is also the right-most module.



Product Link:

<http://embedded-lab.com/blog/?p=9186>