

LCDuino Manual

Thanks for buying an LCDuino. Your LCDuino is the functional equivalent of an Arduino™ Uno and an AdaFruit RGB LCD shield, all in a 80x36mm package.

The LCDuino has a microUSB connector for providing power and uploading sketches. It is compatible with the Arduino IDE (select the Arduino Uno from the board list). It comes with an Arduino serial bootloader, so it's ready to use.

The LCDuino comes with a 26 pin I/O cable that can be used to connect it up conveniently to a breadboard. The cable provides all of the I/O pins available from the ATmega328P controller chip. It also has 5 volt a 5 volt power pin that can be used either to power the LCDuino from the breadboard or power the breadboard circuit from the USB connector on the board.

Assembly of the Quick Kit

If you've purchased your LCDuino as a Quick Kit, you'll have received, in addition to the breadboard interface ribbon cable:

- an LCDuino board
- a 2x16 RGB backlit LCD module
- an 18 pin SIP header
- a 2x13 pin DIP header
- a 2x8 pin DIP header
- 4 #2-56 1/2" nylon bolts
- 4 #2 nylon standoffs
- 4 #2 nylon nuts

To complete assembly of the LCDuino, first install the 2x13 pin DIP header in the I/O port on the board. The header must be installed on the component side of the board. Next, do the same with the 2x8 pin DIP header in the button port. Again, the header is installed on the component side of the board.

Next, place the LCD module face-down on your work surface. Install the 18 pin header in the holes on the module. Do not solder the pins yet. Insert a nylon bolt in each corner of the module from the front side. Place a standoff over each bolt, laying on top of the back (currently the top)

of the LCD module. Lay the LCDuino board on top of the module, with the components up. Thread the bolts through the holes in the corner of the LCDuino board and the pins of the 18 pin header into the corresponding holes on the board. Thread the nylon nuts onto the bolts and tighten them, but not too tight.

Once the LCDuino board is securely fastened to the LCD module, solder the header pins onto both the LCDuino board and the LCD module.

Your LCDuino is now complete.

Software setup

LCDuino can be programmed with the Arduino IDE configured to use an Arduino Uno.

To control the LCD, use either the LiquidTWI2 library or the Adafruit RGB LCD shield library.

I/O pinouts

The I/O header pinout:

- | | |
|-----------|--------------|
| 1. D0 | 2. AREF |
| 3. D1 | 4. A0 |
| 5. D2 | 6. A1 |
| 7. D3 | 8. A2 |
| 9. D4 | 10. A3 |
| 11. D5 | 12. A6 |
| 13. D6 | 14. A7 |
| 15. D7 | 16. i2c SDA |
| 17. D8 | 18. i2c SCL |
| 19. D9 | 20. D10 |
| 21. D12 | 22. +5 volts |
| 23. D13 | 24. D11 |
| 25. RESET | 26. ground |

Note that on breadboard connector the odd numbered pins are on the *right* side of the connector. The bottom two pins on the connector are not connected, as it is a 28 pin connector instead of 26 pin.

The bottom 6 pins of the I/O connector form an AVR ISP connector.

The button header pinout:

2. RESET

4. SELECT

6. RIGHT

8. DOWN

10. UP

12. LEFT

14. BUZZ

16. +5 volts

All odd numbered pins are ground.