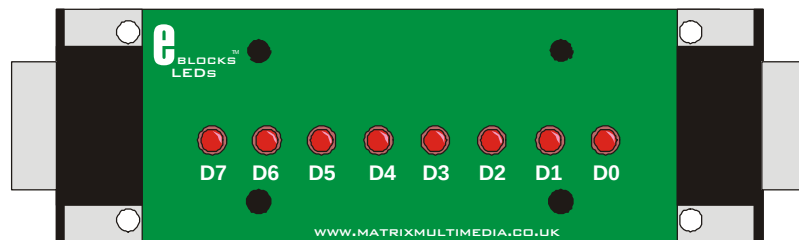


LED Board datasheet



Contents

1. About this document
 2. General information
 3. Board Layout
 4. Getting Started
 5. Circuit description
- Appendix
1. Circuit Diagram

1 About this document

This document concerns the Matrix LED Board code EB-004-00-1.

Trademarks and Copyright

PIC, PICmicro are registered trademarks of Arizona Microchip Inc.

E-blocks is a trademark of Matrix Multimedia Limited.

EB-004-00-1 and associated software and documentation are Copyright ©2004 Matrix Multimedia Limited.

Other sources of information

There are various other documents and sources that you may find useful:

Getting started with E-Blocks.pdf

This describes the E-blocks system and how it can be used to develop complete systems for learning electronics and for PICmicro programming.

PPP Help file

This describes the PPP software and its functionality. PPP software is used for transferring hex code to a PICmicro microcontroller.

Disclaimer

The information in this document is correct at the time of going to press. Matrix Multimedia reserves the right to change specifications from time to time.

Technical support

If you have any problems operating this product then please refer to the troubleshooting section of this document first. You will find the latest software updates, FAQs and other information on our web site:

www.matrixmultimedia.co.uk. If you still have problems please email us at:

support@matrixmultimedia.co.uk. When emailing please state the operating system, the version of PPP you are using.

2 General information

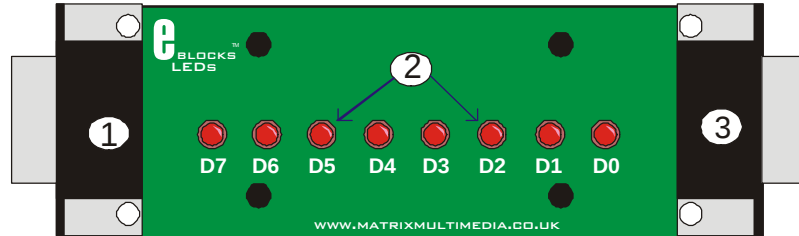
Description

This new LED Board is part of the new product range called E-Blocks. The board allows you to connect up to 8 LEDs to any of the I/O ports on the E-Block multi / Lite programmer board. The standard 9-way D-type connector associated with E-Blocks makes connection. The two D-type connectors provide a bus system that enables 'clean' access to all I/O lines.

Features

- E-blocks compatible
- Low cost
- Upstream and downstream D-type connectors
- Compatible with most I/O ports in the E-Block range (up to 8 I/O lines via 9 way D-type connector)
- Ease to develop programming code using Flowcode icons.

3 LED Board Layout



- 1) 9 Way D-type Plug
- 2) 8 x LEDs D0 – D7
- 3) 9 Way D-type socket

4 Getting Started

As can be seen the circuit diagram (Appendix 1) consists of 8 simple LEDs in circuit with 8 resistors. To test this board you will need to apply 5V in turn to each of the LEDs and check that they light up. This can be done manually or using the test program.

Testing the LED Board – follow.hex

The following instructions explain the steps to test and use your LED Board. The instructions assume that PPP is installed and functional. It also assumes that you are confident in sending a program to the PIC via the multiprogrammer.

The follow.hex program will light up all 8 LEDs consecutively from D0 – D7.

- 1) Ensure power is supplied to all the necessary boards.
- 2) Insert the LED board into Port B of the Multiprogrammer
- 3) Ensure that the Multiprogrammer is in correct configuration
 - Fast mode (SW1 towards the centre of the board)
 - Ensure that a 19.6608MHz crystal is inserted in the Multiprogrammer boardSW2 is not used when in Xtal mode so it doesn't matter it's position
- 4) Program the a PIC16F88 with the test program *follower.hex*
- 5) Check the illumination of all LEDs

This should satisfy that the LED Board is fully functional!

5 Circuit description

The circuit board consists of 8 digital inputs on a 'downstream' 9-way D-type plug. This routes each bit of the bus to an identical LED circuit and to a 9 way D-type socket that can be used for adding further E-blocks in a bus configuration.

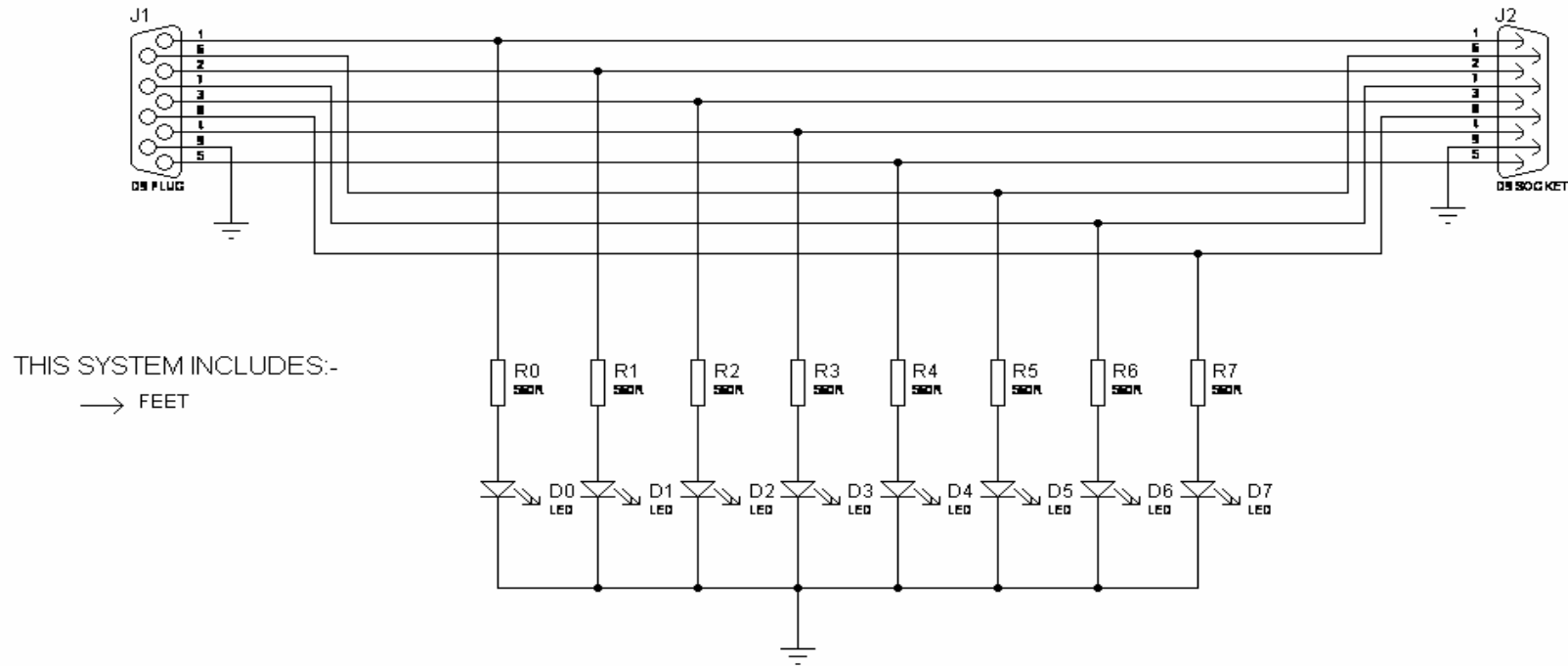
When 5V is applied to each circuit the relevant LED will light up. The minimum voltage required on each circuit to make the LED light up is around 1.8V. The resistor in each circuit is to limit the amount of current through the LED.

Using the LED board in a bus configuration

Care must be taken when connecting another E-block to the LED board. If you try to use one of the lines on the bus as an input then the LED circuit will have an effect on the line: this has the advantage that each Led circuit can be used as a status indicator of the logic level of a particular bus. It has the disadvantage that the Led does take several milliamps and you will therefore need to drive the bus line with a low impedance source.

Matrix Multimedia LED Board

Appendix 1 - Circuit Diagram



		MATRIX MULTIMEDIA LTD. www.matrixmultimedia.co.uk (c) Copyright 2004 Matrix Multimedia	
TITLE: LED BOARD EB-004-00-1		DATE: 24/03/04	PAGE: 1/1
BY: Color Carr		REV: 1	