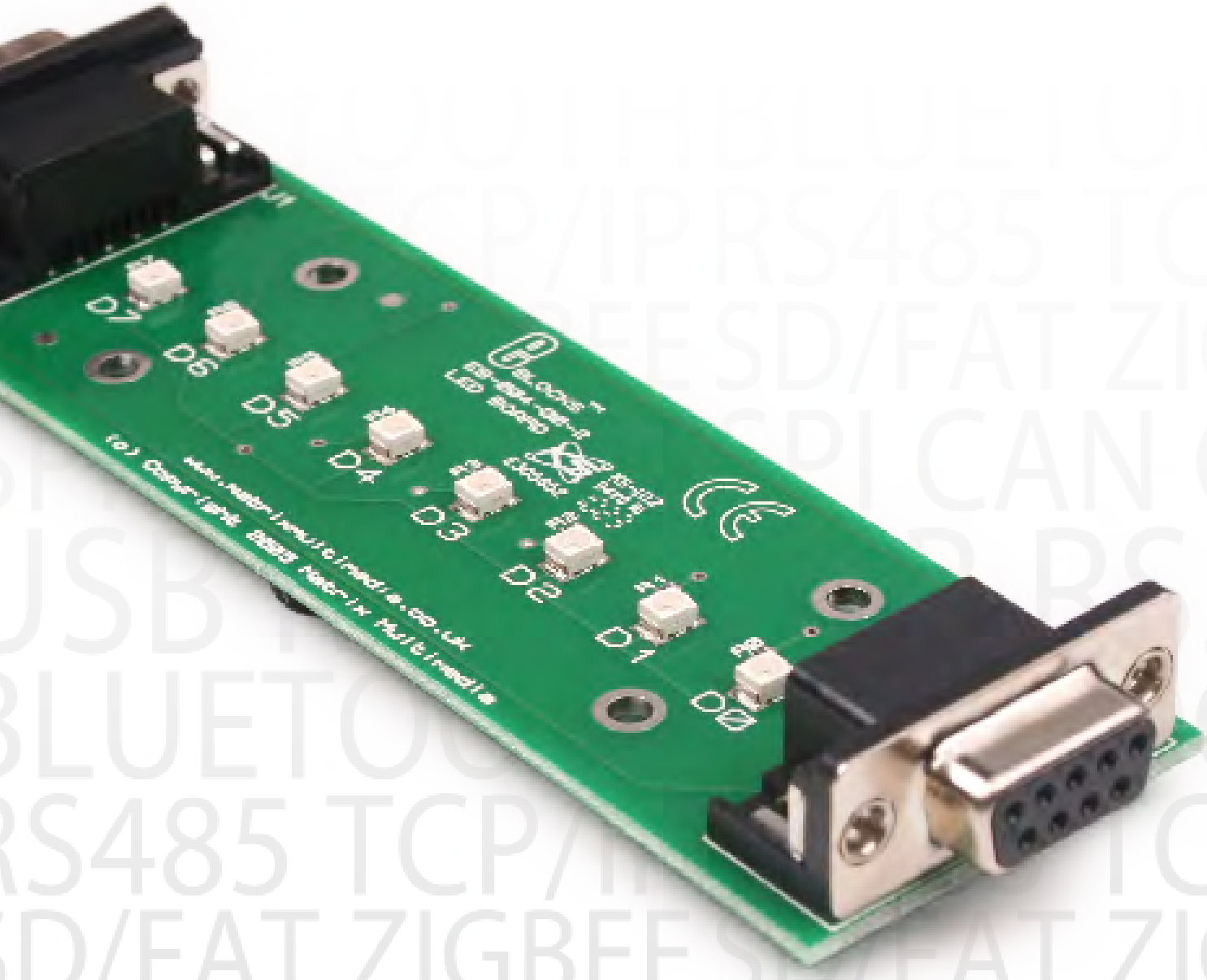
MATRIX

eBLOCKS®

LED board



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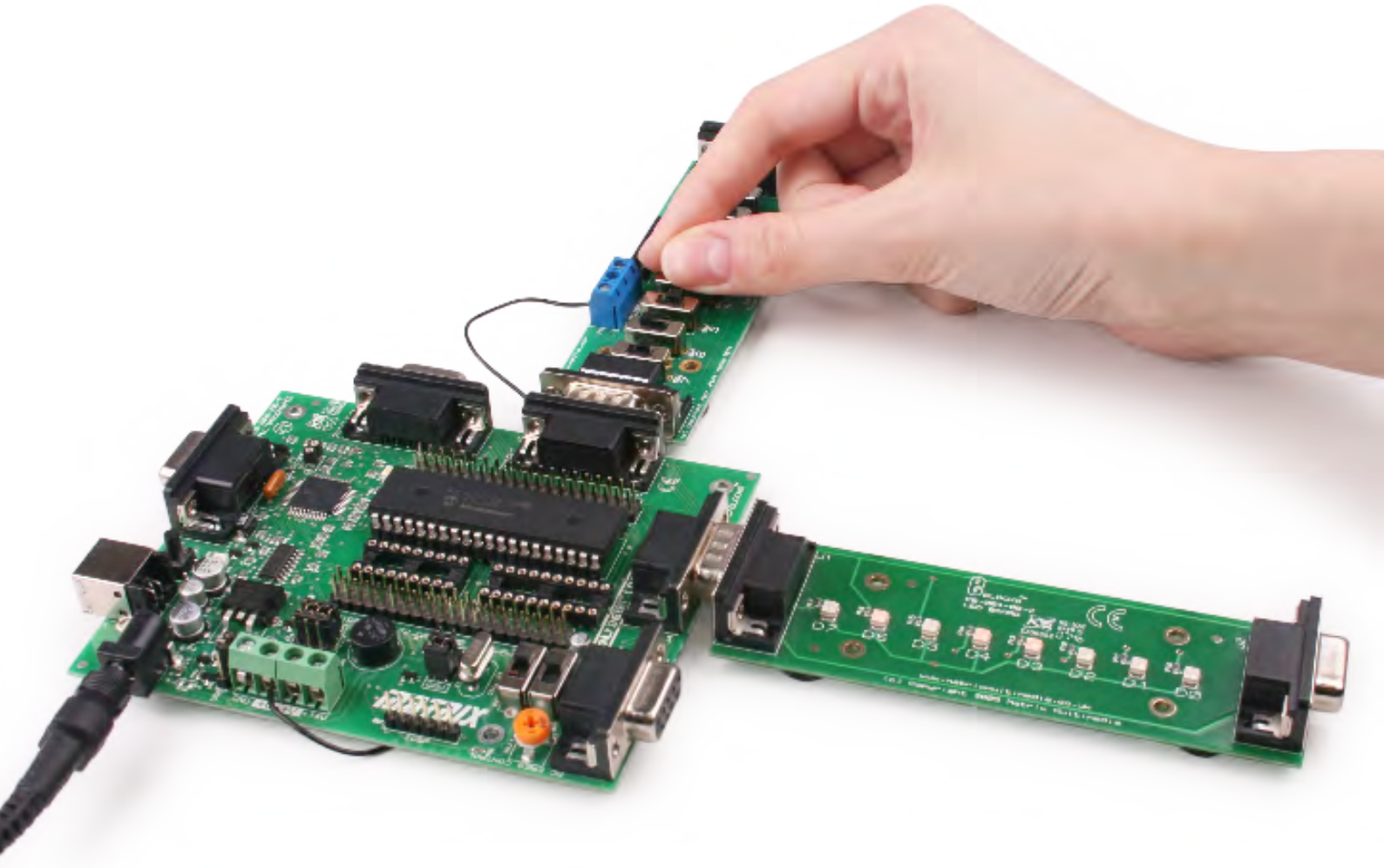

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About this document

This document concerns the EB004 E-blocks LED board.

1. Trademarks and copyright

PIC and PICmicro are registered trademarks of Arizona Microchip Inc. E-blocks is a trademark of Matrix Multimedia Ltd.

2. Disclaimer

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

3. Testing this product

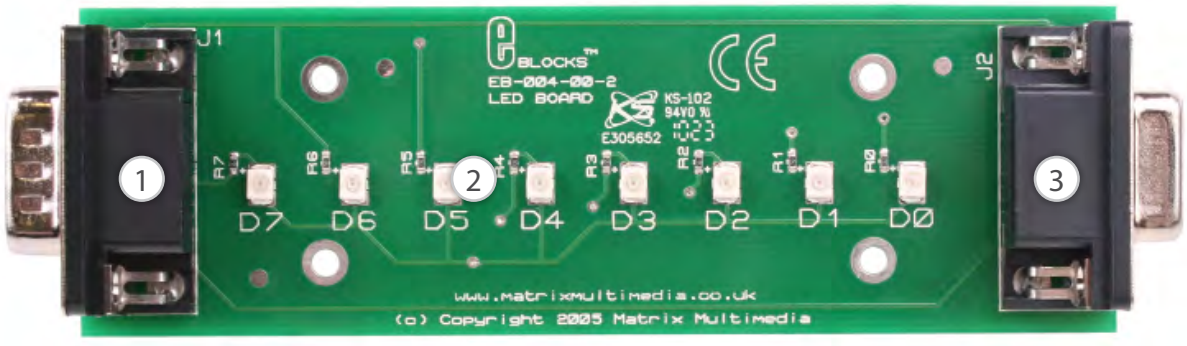
It is advisable to test the product upon receiving it to ensure it works correctly. Matrix provides test procedures for all E-blocks, which can be found in the Support section of the website.

4. Product support

If you require support for this product then please visit the Matrix website, which contains many learning resources for the E-blocks series. On our website you will find:

- How to get started with E-blocks - if you are new to E-blocks and wish to learn how to use them from the beginning there are resources available to help.
- Relevant software and hardware that allow you to use your E-blocks product better.
- Example files and programs.
- Ways to get technical support for your product, either via the forums or by contacting us directly.

Board layout



1. 9-way D-type plug
2. 8 x LEDs D0 - D7
3. 9-way D-type socket

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General information

The board allows you to connect up to 8 LEDs to any of the I/O ports on an upstream board to indicate the status of each line on the port. The LED board connects to upstream boards using a 9-way D-type plug. Further downstream boards can also be connected to the LED board using the 9-way D-type socket. This allows the LED board to be used to indicate the status of the lines on an E-blocks bus within a system.

1. 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
- 3.3 voltage compatible

Circuit description

The EB004 LED board circuit can be observed on page 5.

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.

1. 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 indcator 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. The LED circuit is not suitable for checking the status of analogue inputs.

Protective cover

Most of the boards in the E-blocks range can be fitted with a plastic cover as an optional extra. These covers are there to protect your E-blocks board therefore extending the life of the board. The covers also prevent the removal of external components while still allowing for the adjustment of applicable parts on the board.

12mm M3 spacers, anti-slip M3 nuts and 25mm M3 bolts can be used to attached the cover to the board. These are not included but can be bought separately from our website.

The order code for the EB004 LED board cover is EB704.

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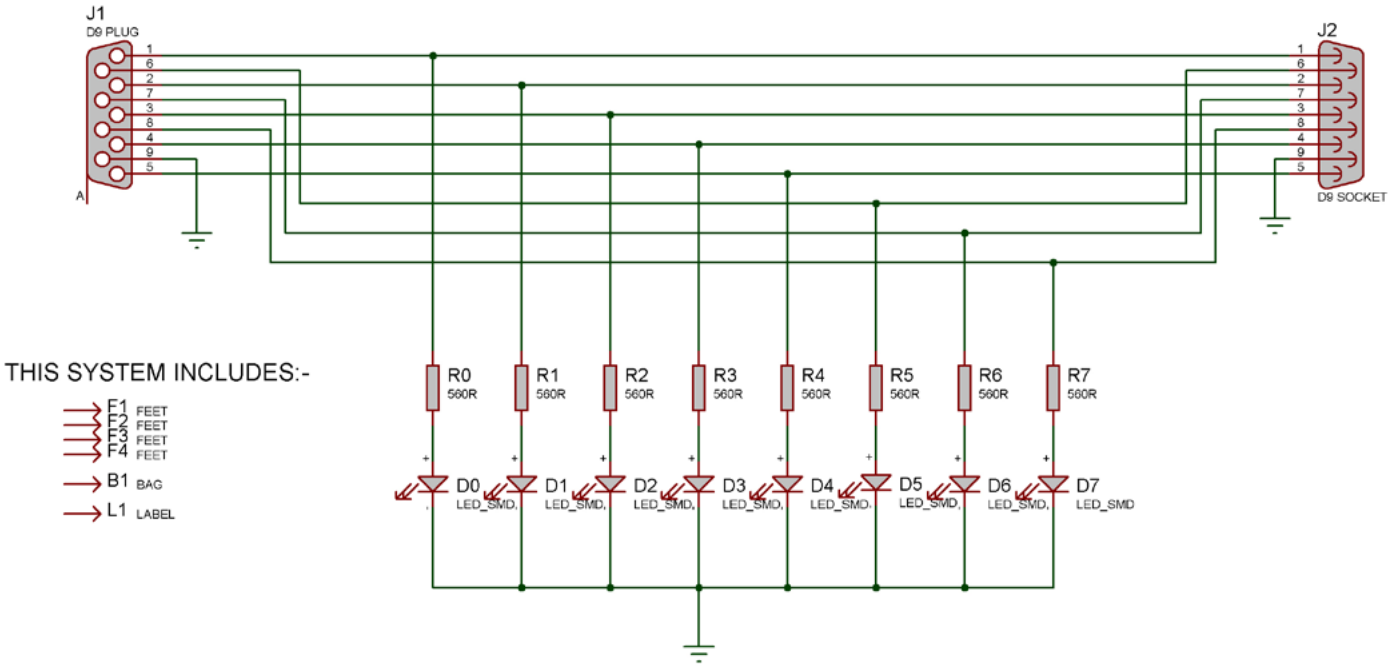
Circuit diagram



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