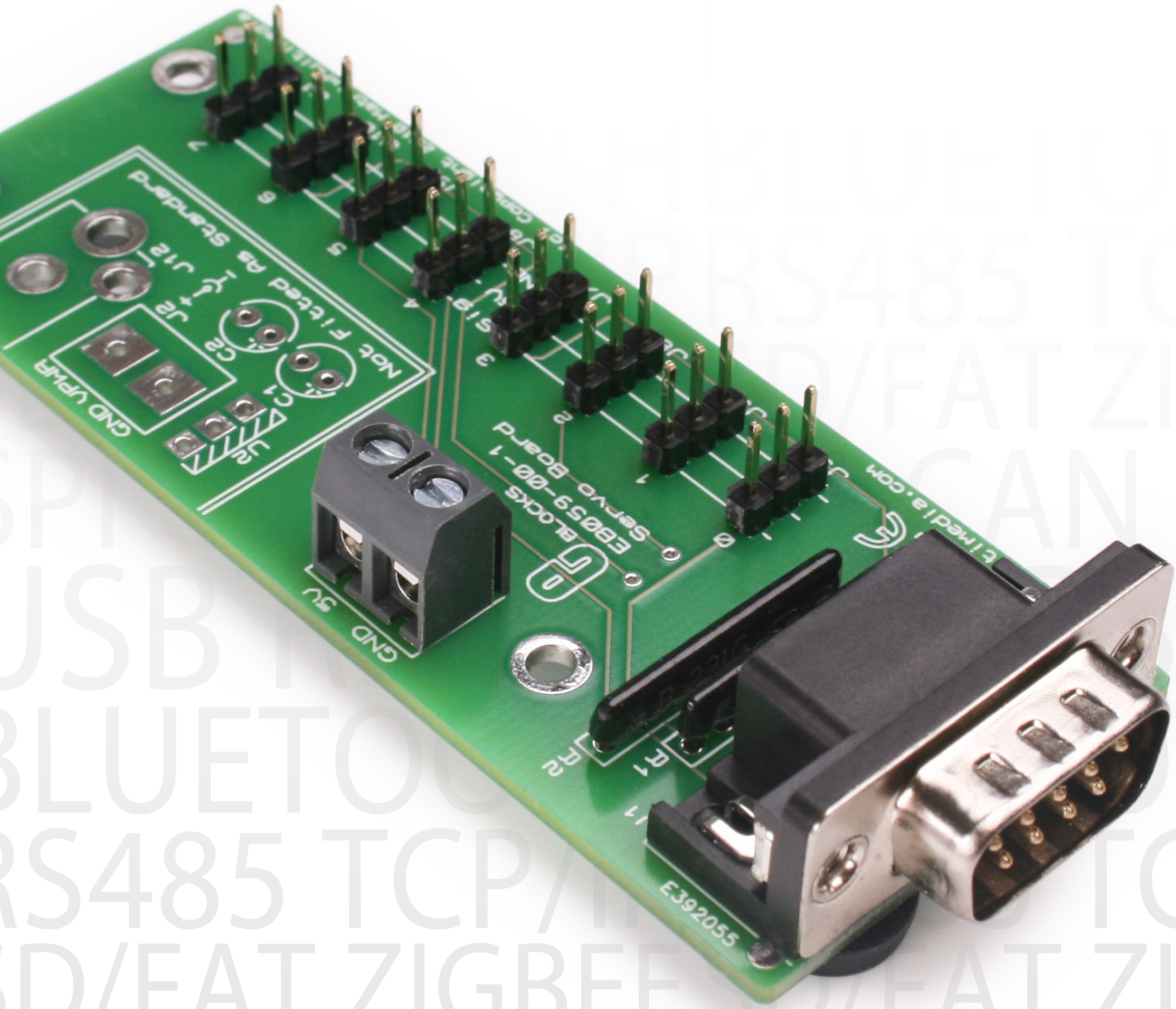
MATRIX

eBLOCKS®

Servo board



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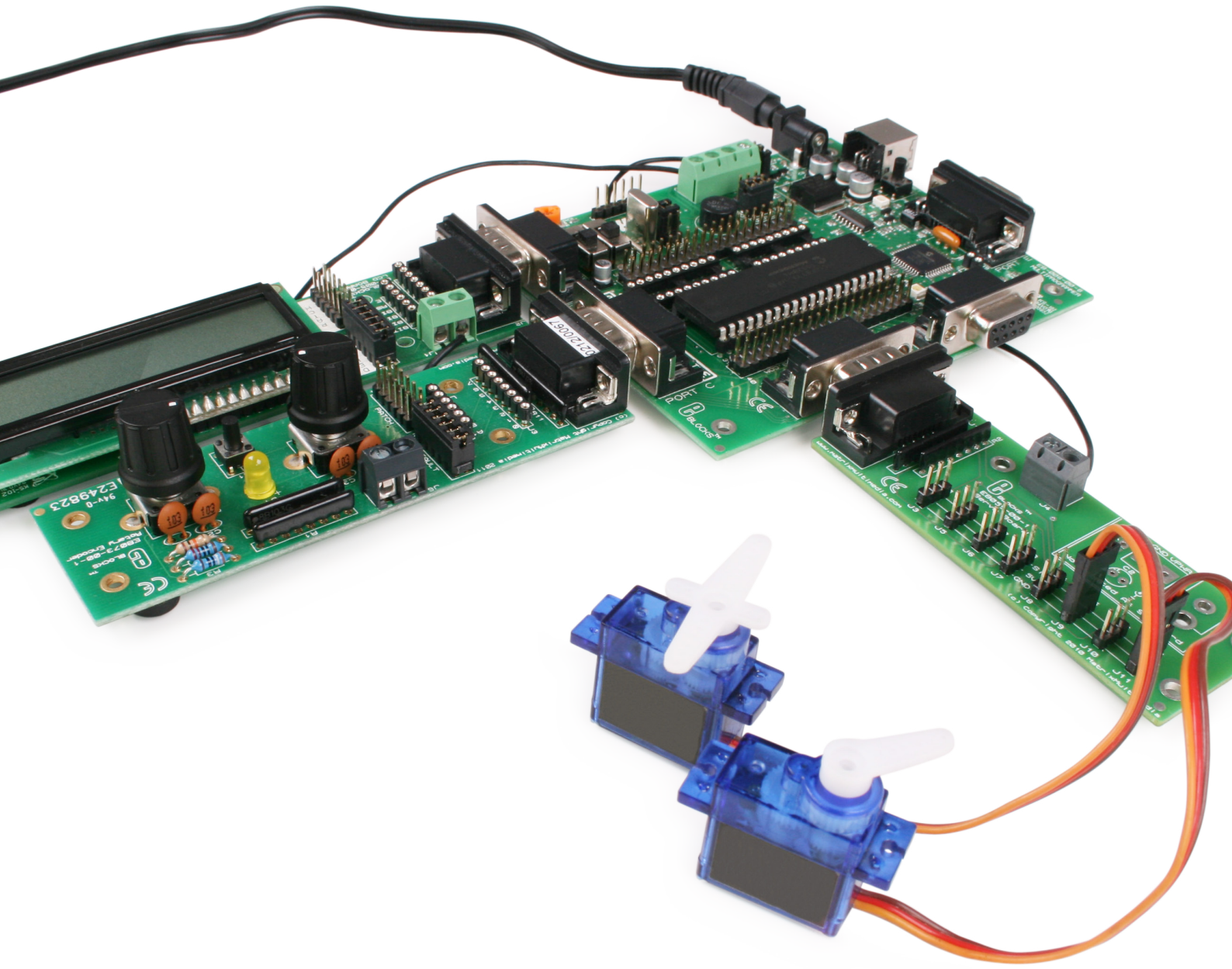

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About this document

This document concerns the EB018 E-blocks CAN bus board.

1. Trademarks and copyright

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

2. Disclaimer

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

3. Testing this product

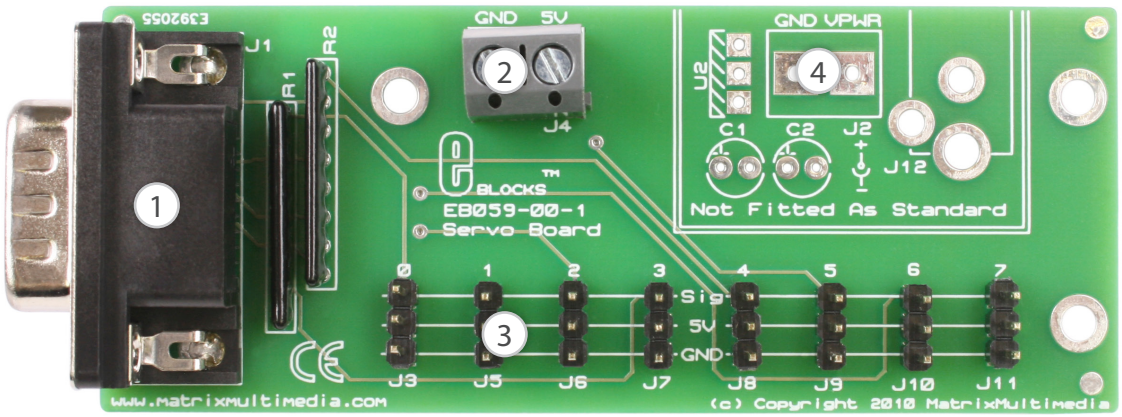
It is advisable to test the product upon receiving it to ensure it works correctly. Matrix provides test procedures for all E-blocks, which can be found in the Support section of the website.

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 downstream D-type connector
2. +5V input voltage screw terminal
3. Servo motor connections
4. No fit 5V regulator components

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General information

Servo motors and servo compatible motor speed controllers are used extensively in R/C and industrial control applications. The Servo motor E-block allows these types of motors to be connected to an E-blocks compatible system allowing for control or exploration of these motors.

1. Features

- Allows up to 8 Servo motors to be connected
- Provides power and ground to the servo motors
- Added no fit component area for non 5V systems to provide a 5V supply for the servo motors
- E-blocks compatible

2. Using with the Flowcode component

If using the EB059 with the Flowcode servo component, please be aware that the chip used must have two CCP (Compare/Capture/PWM) channels available. Please check the chip datasheet or diagram within Flowcode to ensure the chip has the required hardware peripherals.

Circuit description

The EB059 Servo circuit can be observed on page 5. From the circuit it can be seen that individual D type connector pins are employed to control specific servo channels, which in turn control the attached motors.

The EB059 is powered from the 5V +V output of the EB006 multiprogrammer upstream board. For use with 3.3V systems you can either power the E-block at 3.3V or you can fit the no fit circuitry to allow a 5V regulator to provide 5V power to the E-block.

1. No fit circuitry

The EB059 board allows users to custom fir some additional components to the board to allow external powering of the servo motors, these modifications should only be made if the servo's require more current than is available from the 5V regulator on the upstream board. A second Matrix PSU may be required. The list of required components can be found below:

- J2 1 x 2-way screw terminal
- J12 1 x DC PSU socket 2.1mm
- U2 7805 5V voltage regulator
- C1, C2 4.7µF electrolytic capacitors

Please be aware that adding these additional components to your board will invalidate the warranty on the board.

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 EB059 Servo board is EB759.

Matrix Technology Solutions Ltd.

Circuit diagram

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Matrix Technology Solutions Ltd.
The Factory
33 Gibbet Street
Halifax, HX1 5BA, UK

t: +44 (0)1422 252380
e: sales@matrixtsl.com

www.matrixtsl.com

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