

MATRIX

E BLOCKS[®]

Bluetooth[®] training solution



General information

This training solution provides a motivating platform for learning about microcontroller programming and the Bluetooth standards.

1. Features

- Complete Bluetooth training solution
- Allows investigation of Bluetooth protocols and stack
- Includes a range of E-blocks boards
- Programmable with Flowcharts - key macros supplied
- Sample programs in easy to read flowcharts are provided
- Includes teacher's manual

2. Benefits

- Highly motivating
- Accessible to all many levels of student
- Teaches about Bluetooth from a practical point of view
- Provides rapid access to Bluetooth technology

Solution description

This training solution, built from E-blocks technology, allows students to carry out investigations into the Bluetooth standard using high level macros written in Flowcode. The solution consists of two fully working Bluetooth systems - made up from E-blocks - with Bluetooth transceivers and CODEC boards. Students use these two systems and Flowcode macros to investigate various Bluetooth protocols and functions including the serial protocol (SPP), local area protocol (LAP), and the headset profile (HPP). In addition to this other protocols in the Bluetooth stack such as SDP, RFCOMM, and GAP can be examined.

A CODEC interface for transmitting digital audio signals is included. All aspects of the Bluetooth device, such as page scanning, authentication, identification, pairing and SCO channel setup are easily controlled via AT commands and/or device registers.

A teacher's manual is provided with the system which covers system setup, Bluetooth theory and a range of Exercises for students to work through - with fully worked solutions. A CD ROM is included with a number of example files.

All E-blocks boards are fitted with clear acrylic covers which prevent links and chips from being removed. The solution is assembled and tested in the Factory, and is shipped in rugged plastic trays for storage and transport.

A Professional Academic PIC single user licence of Flowcode V6 graphical programming software is provided. Flowcode allows students to understand communications programs and strategies without getting bogged down in the complexity of C or Assembly code. The system can also be used with C and Assembly code (software not provided).

A 50+ page printed and bound manual with student exercises is included. This is also available in electronic form (Word and PDF) along with fully worked examples on CD ROM.

This solution is made available at a discount to the sum of the individual parts.

Learning objectives

1. This solution allows students to work through the following learning objectives/experiments.
 - Data communication between microcontroller and Bluetooth modules
 - AT command structure and programming strategy in AT controlled systems
 - Bluetooth visibility
 - Device discovery, pass keys and addresses
 - Responses - sequence flow and error checking
 - Connecting and pairing
 - Data communication
 - Using Bluetooth for control applications
 - Audio and implementation of the audio gateway
 - Headset and telephone profiles

Further information

1. Learning time

Dependant on course structure and options chosen from the teacher's manual. Approximate figures: 20 hours.

2. Prerequisites

- Some understanding of electronics
- Windows skills
- Flowcode skills

3. System requirements

PC with CD ROM drive and Windows XP or greater.

4. Further information

A separate datasheet is available for each of the E-blocks boards included in the pack. Please see our web site for details.

5. Order code

The order code for this product is EB860.

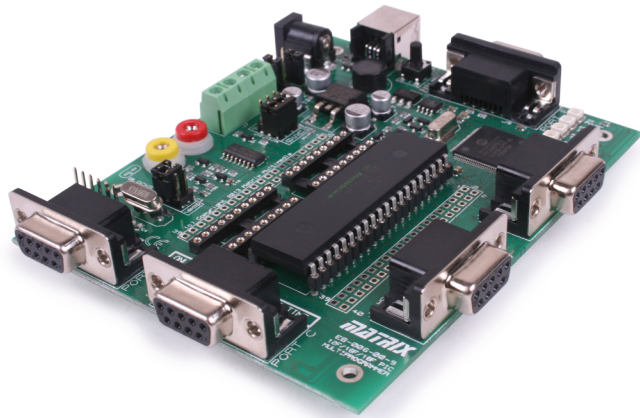
6. Also consider

Mobile phone training solution
CAN bus training solution
Zigbee training solution
USB training solution
Embedded internet training solution
RFID training solution
FPGA Solution

Solution Contents

The table gives a list of the major items of the pack contents.

Datasheets on any individual item are available from the resource section of the Matrix TSL website www.matrixtsl.com



Qty	Description
1	Bluetooth solution CD ROM
1	Bluetooth solution teachers manual
1	Flowcode V6 Professional Academic PIC single user licence
2	Headphones with microphone
2	International power supply with adaptors
1	USB lead
2	E- blocks LCD board
2	E- blocks USB Multiprogrammer
2	E- blocks Switch board
2	E- blocks Keypad board
2	E- blocks Bluetooth board
2	E- blocks CODEC board



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