

# **E-blocks**

## **Getting Started with MPLAB and Matrix development board**

### **Requirements**

- MPLAB – available from Microchips website (do we link this?)
- XC8 Compiler
- EB006 Multiprogrammer board
- EB083 Development board
- PICKit 2 or 3
- ~9V Powersupply for the E-blocks hardware

### **Setting up the hardware**

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- Connect the EB083 to the EB006 at Ports A + B

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- Connect a wire from +V on the EB006 to the +V on the EB083 board
- Power the EB006 via a 12V PSU
- Ensure the Jumper (J12 J13 J14) is in the ICSP position

- Ensure J15 is in the 5V location
- Ensure J11 is in the PSU location

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- Plug the PICKit 2 or 3 into the ICSP header on the board ensure the arrow points to pin1 and plug the PICKit into your computers USB ports.

## Creating a project

For MPLAB X + XC8 Compiler

1. Go to File >> New Project
2. Select a "Standalone Project"
3. Choose the family and device you are using – for the example we are using the 16F1937
4. No supported debug header
5. Choose your programming device, (PICKit 2 or 3 are recommended).
6. Choose the XC8 Compiler
7. Create a project name and select the folder where the files will go

Now we need to create a source file which we can write our code into, use the New File button in MPLAB to create a blank document we can write in.

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In the popup wizard, select a C file and a C 'Source File', then click next and finally finish.

We now have a blank file which we can write our code into. For some example code which lights a single LED on port A see this example code:

<http://www.matrixsl.com/resources/files/misc/test.c>

NOTE: Since this example uses the digital ports on port A, if you are using the development board EB083 then you will need to ensure that the Jumper J14 is in the Digital position rather than the Analogue position.

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Finally to program the device select the “Make and Program device” button from the toolbar of MPLAB.

If all goes well then this should download the program to your chip through the PICKit.

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