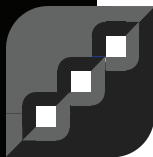
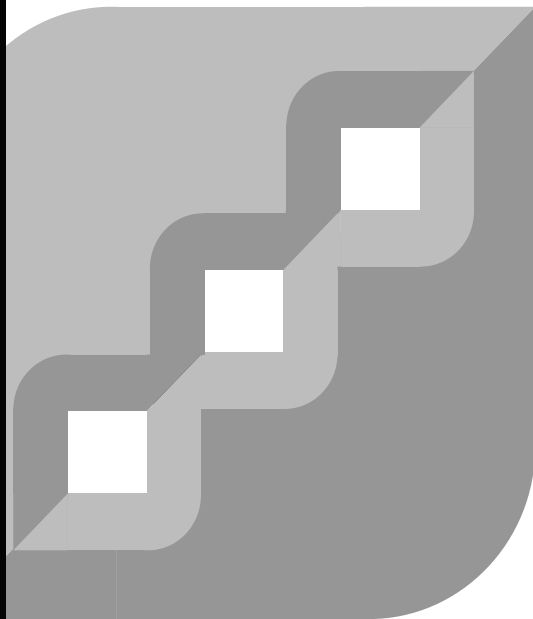


# Getting started guide



**FLOWCODE3<sup>TM</sup>**

**NO CODING, NO LIMITS...**

License Key

# Flowcode 3 installation

Installation can be started by running the program 'SETUP.EXE' in the root directory of the CD ROM. To do this select START...RUN from the main Windows menu and enter 'D:\SETUP.EXE', where 'D:' represents the letter corresponding to your CD ROM drive.

The main Flowcode installation routine will load subsidiary installation routines for hardware set up. These programs installed separately to give you more choice about the installation. The main Flowcode application installation (detailed top right, and in subsequent pages) is started first.

After the initial screen you will be presented with an option to install PPP. PPP is a program that allows you to download the Hex files that Flowcode produces to Matrix Multimedia PICmicro® microcontroller programming hardware. Flowcode is compatible with other programming software and hardware, and so if you are using third party PICmicro microcontroller programmers then do not install PPP. If you are unsure then at stage 2 click on the PPP install button: you can remove this software at a later date if you need to. The PPP installation procedure is detailed in the middle of the page opposite, and in the middle of subsequent pages.

After PPP has installed a third installation routine for the hardware USB driver for USB versions of Matrix Multimedia hardware will start up. This is detailed in the following pages below the PPP installation details.

Before starting the installation process please refer to the README.TXT file on your CD ROM drive which contains additional information about the installation process.

## Licenses and activation

For anti-piracy reasons all copies of Flowcode must be activated. Once installed Flowcode will be fully functional for 30 days until it is activated. To activate Flowcode click on the BUY NOW button, which appears when you start Flowcode, to send in the activation data and receive a registered license key. If you do not have an internet connection please call us.

## Network installation

If you have bought a network version of this product then you have two options for installation:

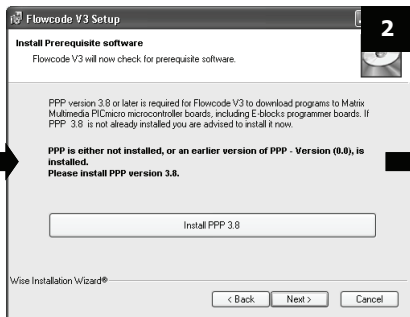
- 1: You can install his program on each of the machines on which it will be used and for which you have a license. The number of machines this can be installed on is limited to the license number: for example if you have a 10 user license you can install it on 10 machines
- 2: If you have a network management system then you can use the MSI script provided in the SETUP directory of the CD ROM to automate the installation process.

## Technical support

Technical support for this product is available on our web site: [www.matrixmultimedia.com](http://www.matrixmultimedia.com).



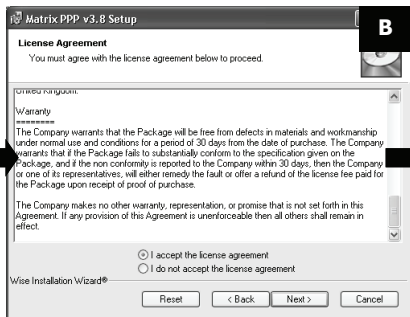
This is the first Flowcode installation screen. Please read the instructions and press NEXT when you are ready to continue.



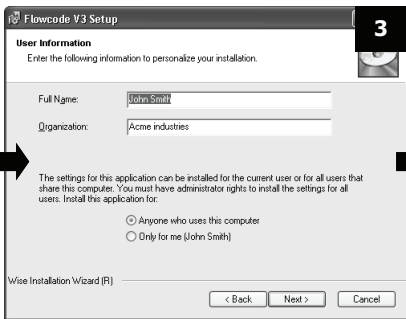
The program will ask if you want to install the latest version of PPP. If you want to install it click on the INSTALL PPP button. The PPP installation process is detailed below. When the PPP and USB driver install finishes you will be routed to the next screen.



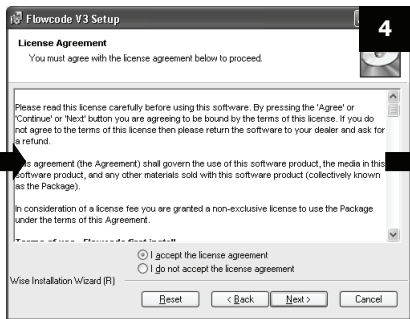
This is the first screen of the PPP installation which is started after step 2 of the Flowcode installation if you click the INSTALL PPP button. Please read the instructions and press NEXT when you are ready to continue.



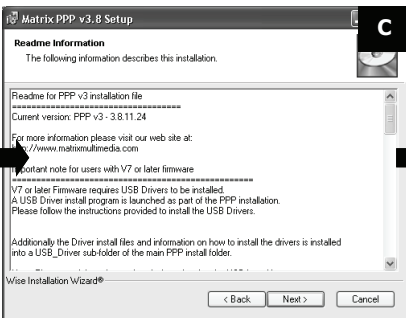
This shows you the license agreement. Please read this and, if you agree, check the 'I accept' radio button, then select NEXT.



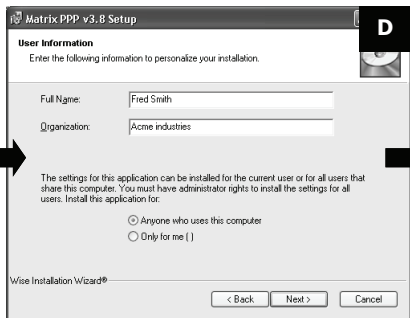
Here you can select whether Flowcode is made available for all people who use your PC, or just for you. Press NEXT to continue.



Read the license agreement and, if you agree, check the 'I accept' radio button, then select NEXT.



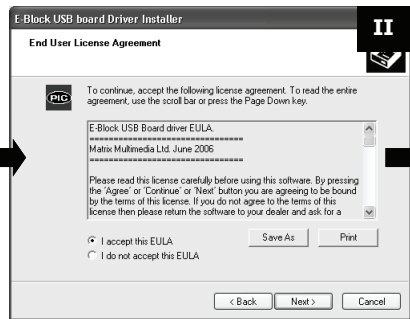
This screen contains useful information on the PPP installation process. Once you have read it press NEXT to continue.



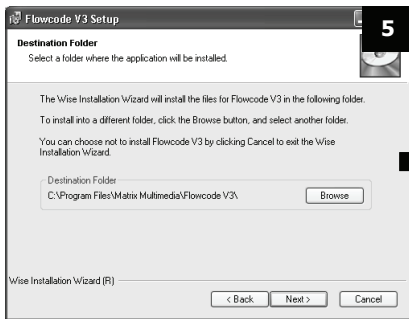
Here you can select whether PPP is made available for all people who use your PC, or just for you. Press NEXT to continue.



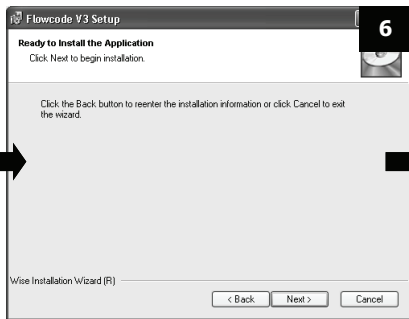
This is the first USB board driver installation screen. This is automatically started once PPP has installed. Please read the instructions and press NEXT when you are ready to continue.



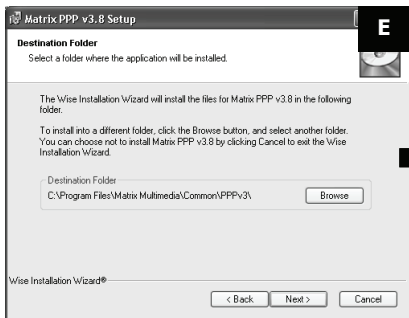
This shows you the driver End User License Agreement (EULA). Please read this and, if you agree, check the 'I accept' radio button, then select NEXT.



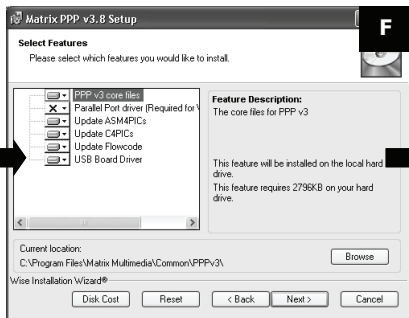
This screen allows you to choose where to install Flowcode. Use the **BROWSE** button to customise, or just select **NEXT**.



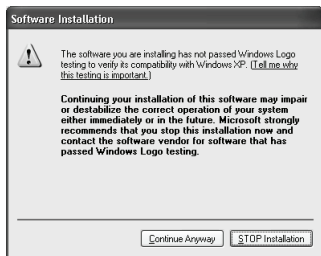
If you are happy with the installation choices you have made click **NEXT**, or click **BACK** to make changes.



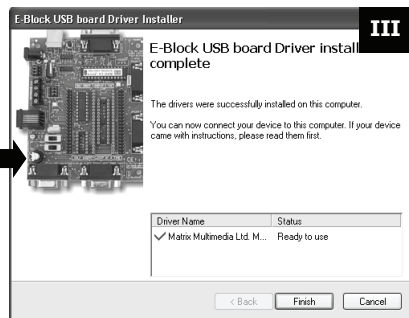
This screen allows you to choose where to install PPP. Use the **BROWSE** button to customise or just select **NEXT**.



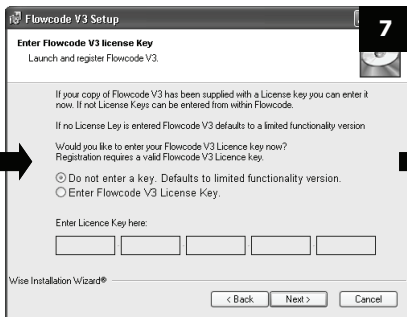
Other Matrix Multimedia packages also use PPP. This screen allows you to update these packages with the new version of PPP. The contents of the screen will vary from one installation to another. If in doubt just click **NEXT**.



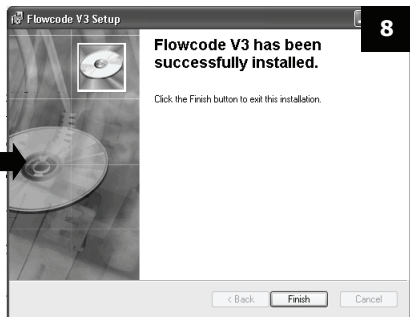
If you see this screen don't panic: Flowcode is not registered with Microsoft which is why this screen appears. The driver software is safe to use. Select **CONTINUE ANYWAY**.



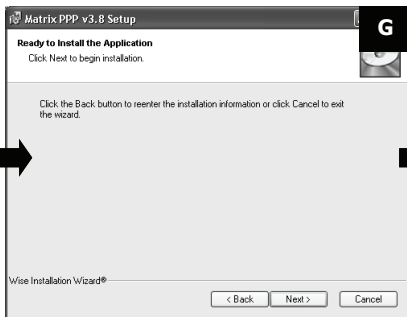
This is the last screen of the driver installation. When you click **FINISH** the driver is installed and when you plug in your Matrix Multimedia hardware (E-blocks or Development board) it will be automatically recognised by your PC.



Once installed Flowcode will ask you for a License key. This is printed on the front cover of this booklet. If you do not have a license key contact your dealer. Selecting 'Do not enter key' will enable you to use a demo version of Flowcode.



Your installation is now complete. Press FINISH to exit the Flowcode install program. Flowcode is now fully functional for up to 30 days before activation is required.



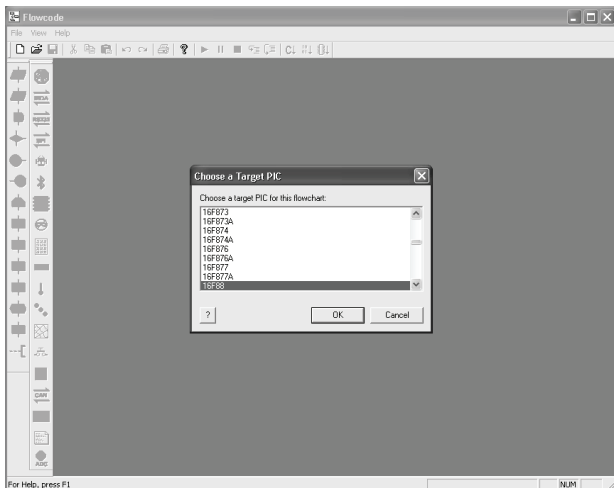
If you are happy with the installation choices you have made click NEXT, or click BACK to make changes. Once this phase of the installation is complete the USB drivers will automatically be installed. This process is detailed on the previous page.



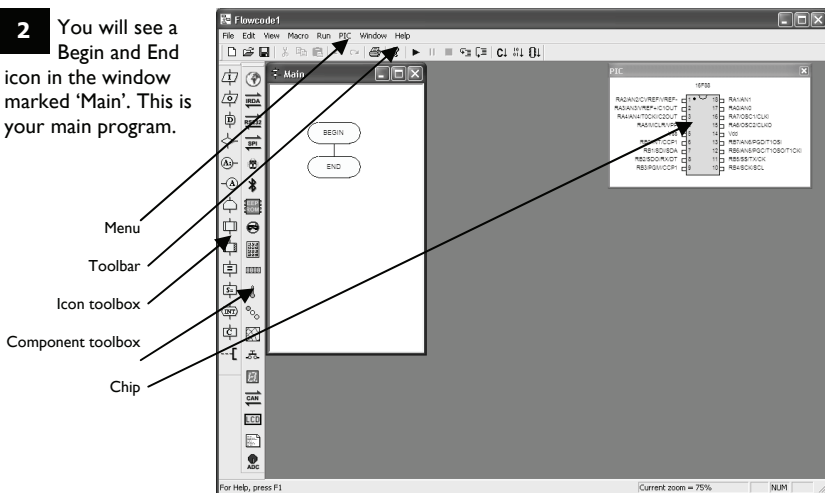
Your installation is now complete. Press FINISH to exit the PPP install program.

# Making your first program

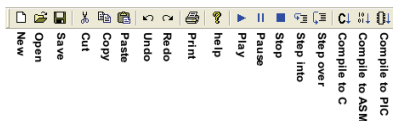
**1** When you first load Flowcode you will be given a choice of creating a new flowchart or opening an existing chart. Click on the second option and you will be asked to choose a PICmicro MicroController Unit (MCU) device. Here we will choose a PIC16F88.



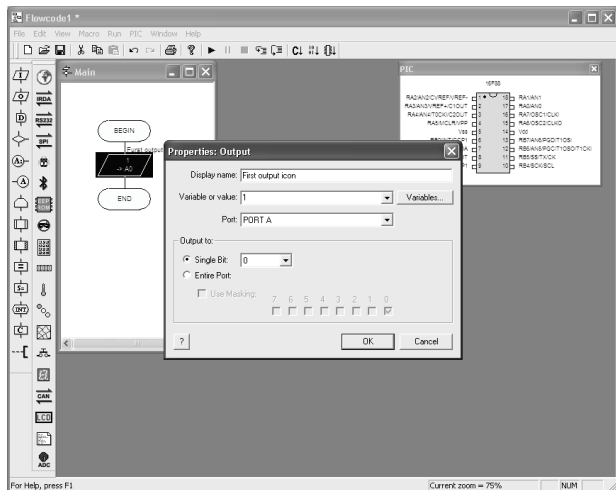
**2** You will see a Begin and End icon in the window marked 'Main'. This is your main program.



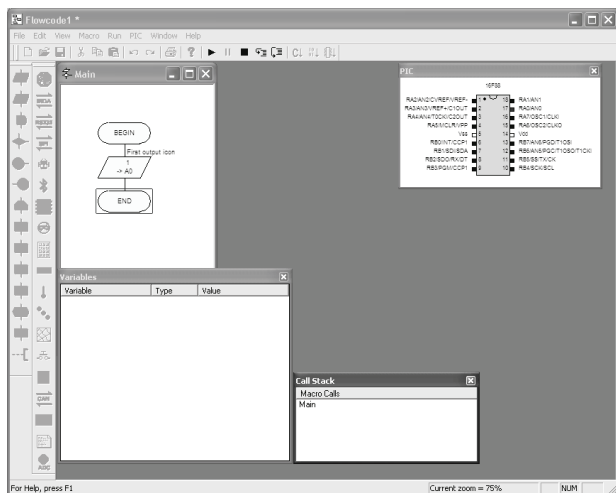
This graphic shows the functions of icons on the Toolbar. To find out what an icon's function is simply hold the mouse pointer over the icon and a small 'tool tip' will give you a clue.



**3** From the Icon toolbox drag an Output icon onto the space between the Begin and End icons. Then click twice on the icon to bring up the properties window. Set the properties as shown. (Variable = I, Port = PORTA, single bit)



**4** Click on the Step Into icon (see below) or select RUN...STEP INTO on the menu. You can use this to step through your program. Notice A0 on the chip goes red to indicate logic 1 output.

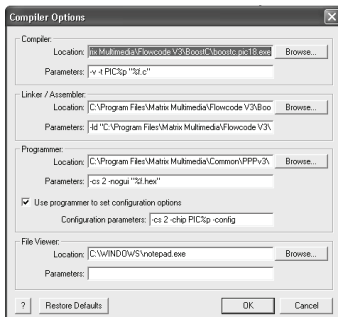


This is your first program. You can use the help file (click on HELP in the Menu) to understand how all the icons and the components work. On our web site you will find a number of example files, of varying degrees of sophistication, which will help you to understand how to construct more functional programs.

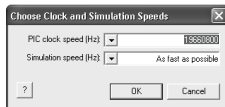
Please refer to the forum at [www.matrixmultimedia.com](http://www.matrixmultimedia.com) for any technical support issues.

# Preparing to download

**1** Before downloading to your PICmicro microcontroller you need to make some decisions about Flowcode option settings. Select **CHIP...COMPILER OPTIONS**. Compiler and Linker/Assembler sections should not need changing. The default programming software is Matrix Multimedia's PPP which complements Matrix's own hardware systems. If you are using other hardware please refer to your manual for further information - you should be able to set up Flowcode to work with your own hardware.



**2** Before downloading you will need to enter the oscillating frequency of your crystal or oscillator. To do this select **CHIP...CLOCK SPEED** and enter the frequency in Hz. You need to tell Flowcode the correct oscillator frequency so that it can accurately implement the Delay function which is derived by counting clock pulses.



Notice that at this point you can also set the simulation speed. Try setting this to 10 and select **RUN...PLAY** from the menu.

**3** If you have carried out step 1 correctly then when you select **CHIP...CONFIGURE** you will start up the download utility with the PICmicro set up screen. Here you will need to make further settings referring to the clock circuit you are using (Resistor/Capacitor, external, crystal etc.) the type of chip etc.



**4** You are now ready to download your first program. Click on the **Compile to CHIP** button on the Toolbar. If your hardware is set up correctly you should now see 5V on A0.

**5** If it does not work here are some common reasons:

Clock settings: Have you chosen HS for High Speed crystals, or XT for low speed crystals? If you have selected RC do you have an RC network connected to the chip? If you have selected Crystal oscillator have you selected HS or XT - it matters!

If you have option switches on your hardware are they in the correct position?

If you have a separate selection for PICmicro MCU device in the programming utility is it correctly set up?

If you have options on how you set up hardware LEDs and switches have you set them correctly?

Have you got the latest version of your download utility?

If you have options for Low Voltage Programming on your hardware, and you are using LVP, have you made the appropriate settings in your software, and on your development hardware?

# Getting further information

Once you have got your first program running inside your PICmicro microcontroller you are ready to start to develop more sophisticated programs than the one we have just seen. To help you learn more there are several places where you can go for further information:

**Help file:** contains help on all basic components and on Flowcode software itself

**Example files:** On the Flowcode section of our web site you will find around 30 example files demonstrating principles of Flowcode operation.

**Learning Centre:** on the Matrix Multimedia web site you will find a number of articles, learning resources and manuals on how to use Flowcode. This includes a range of videos that explain how programs are constructed with Flowcode.

**Forum:** if you get stuck in installing Flowcode or in using Flowcode for a particular application then please refer to the Forum at: [www.matrixmultimedia.com](http://www.matrixmultimedia.com) Here you can search for those who have had similar problems and find fixes. You can also post your questions to our engineers who answer Forum queries as a priority over other technical support enquiries.

## Licensing and versions

The features that you have in your version of Flowcode will depend on which version you have bought. There are several versions of Flowcode 3 that you can see in the table on the right. The differences in functionality are also shown in the table. The terms used in the table are explained below:

**2KB code limit:** For lower specification versions there is a limit on the size of compiled code that Flowcode will produce. In this case the code will limit to 2KB of compiled and assembled code. (18 series is 4K)

**Limited components:** Some versions do not have all components. Limited component versions include LED, Switch, ADC, LCD, 7-segment display, Keypad, Quad 7-segment display, Burglar alarm and Buggy. These versions can not have more components added to them as free downloads. Advanced components include: SPI bus, I<sup>2</sup>C bus, Internet, Webserver, CAN bus, LIN bus, EEPROM, IrDA, Bluetooth, and RS232. Other components may be added to this list.

**Multi-user education:** The software license for multi-user versions is for educational use only. Industrial users who need more than one license will need to purchase each license separately. Only 10 and 50 multi-user versions are available. Those requiring between 10 and 20 users will need to purchase 2 off 10 user versions.

### Upgrading licenses

If you want to upgrade your version from one type of license to another, then you simply pay the price difference between the two versions.

# Version summary

	Demo version	Hardware locked	Flowcode Student	Flowcode Pro	Flowcode 10 concurrent users	Flowcode 50 concurrent users
Unlimited icons	N	Y	Y	Y	Y	Y
>2K compiled code size	N	N	Y	Y	Y	Y
All devices	N	N	Y	Y	Y	Y
All components	N	N	N	Y	Y	Y
Licence for commercial use	N	N	N	Y	N	N
Multi-user license for education	N	N	N	N	Y	Y

## System requirements

Personal computer  
Pentium processor or greater  
Windows 98 +  
CD ROM drive  
256MB RAM  
50MB hard disk space

An internet connection is recommended for product activation.

