



VM-1/Venom-SC Getting Started Guide (5813/IDE)

Getting started with the VM-1

This is the Getting Started Guide for the VM-1 Starter Kit.

Kit Contents

As well as this guide, you should have the following in your kit:

- VM-1 Application Board 3 (5811)
- VM-1 Control Computer (5801, fitted to Application Board 3)
- Venom-SC Flash Chip (5803, fitted to VM-1)
- Clock Chip (5505, fitted to VM-1)
- VM-1 Breakout Board (5805)
- 16 key Keypad
- 20 Character by 2 line Alphanumeric LCD
- Serial Lead
- USB to Serial Adaptor – in case your PC has no COM port.
- Power Supply
- Chip Extraction Tool
- *A Tutorial Guide* (paperback book)
- *Venom-SC Quick Reference Guide* (laminated sheet)

Connecting it all up

The language flash chip and real time clock chip are supplied fitted to the VM-1, and the VM-1 already fitted to the Application Board.

If they are not, or you need to remove them for any reason, take care to insert them the right way round:

- A corner is cut off the flash, and the socket, to aid alignment. Also there is usually a dot on the flash chip and an arrow in the socket to indicate pin 1.
- The clock chip has a notch at one end that should be aligned with the printed outline on the PCB.
- The VM-1 has more pins at one end than the other.

Power to the board comes in via the four-way screw terminal connector. The kit includes a power supply with pre-wired plug. Plug this into the application board power connector – it will only fit in one connector. Don't turn the power on just yet.

Connect the board's serial port 1 (JP5) to your PC's COM port.

If you don't have a COM port on your PC then you can use the USB to Serial Adaptor supplied (see the instructions in the USB adaptor package). We recommend you use an onboard COM port if you have the choice.

Installing VenomIDE on your PC

VenomIDE is the VM-1's PC development toolset. You can download it from our website or request it on a CD from us. VenomIDE is intended for Windows 98 and XP. It may work on other operating systems, but this has not been tested. If you can't use VenomIDE for any reason you can still program the VM-1 – see the next section.

1. Download VenomIDE from our website: www.microrobotics.co.uk on to your PC.
2. Install the VenomIDE Integrated Development Environment on your PC by opening up the downloaded zip file and then double clicking on the file Setup.exe. Follow the instructions on the screen.
3. Start VenomIDE by double clicking on the VenomIDE icon on your desktop.
4. Select the COM port you are using in the menu `Terminal>Settings`.
5. Set both the switches on the VM-1 controller to ON (for Program Mode and 38,400 baud communications).

6. Turn on the power to the VM-1. You should see the Venom-SC startup message on your terminal screen:

```
VM-1 Control Computer running Venom-SC
Version 2006 02 22
Copyright 2000-2006 Micro-Robotics Ltd.
Clear memory: Y/N/S ?
```

While the controller is waiting at the prompt, its LED will turn on as an indication that it is powered but in program mode, and so not running an application. [If you have left the VM-1 in RUN mode, the LED will flash once a second, and you will see the "-->" prompt in the terminal window]

If you don't get any message at all, then switch the power off and check the power connection, serial connection, VM-1 switches, and that the VM-1 and its language ROM are plugged in correctly. Check the IDE terminal configuration in the menu [Terminal>Settings](#): it should be set to 38,400 baud, Hardware handshaking, and the COM port the VM-1 is physically connected to.

Tutorial

You should now open VenomIDE help (in the menu [Help>Contents](#)) and go to *New user tutorial*. This tutorial replaces the first chapter of the *Tutorial Guide* book.

Not using VenomIDE

If you can't use VenomIDE for any reason you can still program the VM-1 using any terminal emulator and text editor – for example HyperTerminal and Notepad.

Set up the terminal emulator communications protocol as follows:

Baud Rate	38400
Data Bits	8
Stop Bits	1
Parity	None
Handshaking	Hardware

Set both the switches on the VM-1 controller to ON (for program mode and 38,400 baud). Turn the power supply on. You should see the VM-1 startup message on your terminal screen:

```
VM-1 Control Computer running Venom-SC
Version 2004 01 08
Copyright 2000-2004 Micro-Robotics Ltd.
Clear memory: Y/N/S ?
```

While the controller is waiting at the prompt, its LED will turn on as an indication that it is powered but in program mode, and so not running an application. [If you have left the VM-1 in RUN mode, the LED will flash once a second, and you will see the "-->" prompt in the terminal window]

If you don't get any message at all, then switch the power off and check the power connection, serial connection, VM-1 switches, and your terminal configuration. Check that the VM-1 and its language ROM are plugged in correctly.

Now you are ready to start reading the *Tutorial Guide* book.

You don't need to read any further than this until you want to use the keypad and the LCD display.

Keypad and LCD display

The starter kit comes with a 20-character by two-line Alphanumeric LCD, and a 4 by 4 keypad. The display connector is polarised and should be connected to JP16. To test the display, type the following at the command line prompt:

```
-->MAKE lcd AlphaLCD(20, 2, 0)
-->PRINT TO lcd, "Hello!"
```

You should see 'Hello!' displayed at the top left of the display. If the display is blank, try adjusting the contrast using R11.

The keypad should be connected to JP17. To test the keypad, fit it to JP17 and type the following:

```
-->MAKE kpd Keypad(0, 248)
-->PRINT kpd.Get, CR
```

Then press any key on the keypad. The number of the key you pressed should be displayed on the terminal. e.g.

```
--> 4
```

The keys are numbered from 0 to 15. The numbering sequence depends upon the orientation of the connector. To find the number of each key, type in the following command, and then press each key in turn.

```
-->FOREVER PRINT kpd.Get, CR
```

To stop this command and return to the command line, press CTRL-C, i.e. press 'C' while holding down the Ctrl key.

See the Tutorial Guide, or the menu [Help>Venom-SC language index](#) in the IDE, for a full description of the commands used.