Some Frequently Asked Questions

Q   *I need eight digital I/O lines and two analogue inputs for use with my desktop PC as well as with a laptop. Can you recommend an external interface that I can use?*

A   *Assuming that both your laptop and your dekstop PCs have USB ports (they should have nowadays!) I suggest that you take a look at the Measurement and Computing Corporation's PM-1208LS 'Personal Measurement Device'. This plugs in to a USB port and will provide you with eight analog inputs, two 10-bit analog outputs, 16 digital I/O connections and one 32-bit event counter. In fact, I carry one of these handy gadgets around with me and use it both with my laptop and also with the PC in my workshop.*

Q   *I am using a PC with a parallel port card but I can't seem to access the port. I can read and write values without any errors but the data doesn't agree with what's actually appearing at the port lines. What's happening?*

A   *Unfortunately, this is a common problemwith today's 32-bit operating systems so I guess that you are probably using Windows NT or Windows XT? Direct port access shouldn't be a problem from a true DOS environment and also when using Windows 95 or Windows 98. Unfortunately, within the Protected Mode environment of a modern 32-bit operating system, it is no longer possible to access hardware directly. Instead, you will need to enlist the services of a kernel mode driver that runs at the highest privileged level.Writing a kernel mode driver is not an easy task (unless you just happen to be an accomplished code warrior) but you can easily obtain one from the Web. Try these for starters:*
- *inpout32.dll from logix4u   (http://www.logix4u.net)*
- *io.dll from Fred Bulback (http://www.geekhideout.com/iodll.shtml)*
- *NTPort Library from Zeal SoftStudio (http://www.zealsoft.com)*
- *WinIo from Yariv Kaplan (http://www.internals.com)*
- *DriverLINX Port I/O Driver (DLPortIO.DLL) from Scientific Software Tools, Inc. (http://www.sstnet.com)*

Q   *I'm keen to have a try at writing a Windows application using assembly code but there doesn't seem to be much in the way of a development environment available.What would you suggest?*

A   *This is an easy one! MASM32 is an excellent, free and well-supported (by real enthusiasts!) compiler which comes with an excellent IDE and which can quickly and easily produce applications that will run in a Windows environment. You can download the software from:*

Q   *I need to find out more about the PC's parallel port. Is there are a reference book available?*

A   *The best book (dedicated entirely to the PC's parallel port!) is by Jan Axelson. The book is called Parallel Port Complete and it's available from Lakeview Research, ISBN 0 9650 8191. The programming examples (there are many of them!) are all written using MS Visual Basic.*

Q   *Can you tell me where I can get hold of the AD7569 I/O processor mentioned in the book?*

A   *RS Components stock this handy chip. It is available in a 24-pin DIL package and is listed under stock number 297-743 at http://www.rswww.com.*

Q   *Can you tell me where I can get hold of the AD590 temperature sensor mentioned in the book?*

A   *RS Components stock several versions of this device. The AD590KH (which has a temperature range of -55°C to +150°C) is available in a TO52 package and is listed under stock number 308-809 at http://www.rswww.com. If you want to use a cheaper device and have an application that operates inside the range -25°C to +105°C) you might want to take a look at the AD592AN. This sensor is supplied in a TO92 package and is listed under stock number 112-8014.*

Q   *I've built the transistor relay driver described in the Applications chapter but when I tried to use it the relay buzzes loudly. Can you tell me what's wrong?*

A   *There are two possibilities. Firstly, check that you are using a well regulated and smoothed DC supply for the +12V rail. Secondly, check that you have a good 0V connection between the parallel port interface and the relay driver. If you've left the 0V rail unconnected then you are likely to have quite a lot of 50/60Hz present!*

Q   *I am looking for a BASIC compiler to program my application. I would like something better than QBASIC but I don't want to move on to Visual Basic. Is there anything out there that will do the job?*

A   *Yes - there is! PowerBASIC 3.5 is a superb replacement for QBASIC. To find out more go to: www.powerbasic.com.*
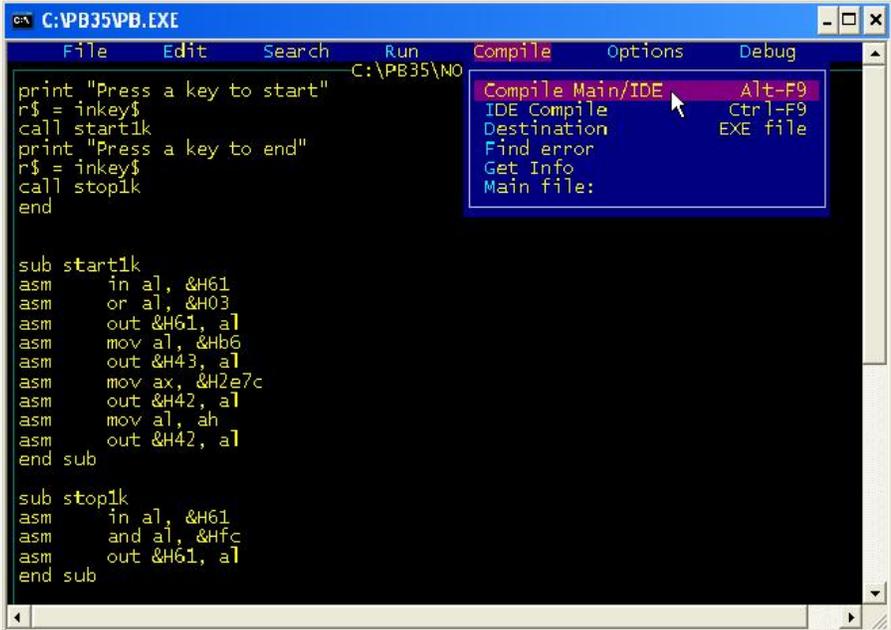
Q   *Can you tell me where I can find the Debug and Dr Watson programs mentioned in the book?I am using Windows XP but I can't locate them in the c:\windows folder.*

A   *Take a look in the c:\windows\system32 folder and you should find them as debug.exe and drwatson.exe. you might also find a 32-bit debugger called drwtsn32.exe. Good luck!*

Q   *How can my program locate the port addresses on a PC. Presumably not all PCs will be the same?*

A   *The values that you need are all stored in a PC's BIOS RAM area (from addresses 400H upwards). Chapter 1 shows you how to locate and extract the information - the programming should be fairly straightforward!*