**PROTEUS**

Traditionally, circuit simulation has been a non-interactive affair. In the early days, net lists were prepared by hand, and output consisted of reams of numbers. If you were lucky, you got a pseudo-graphical output plotted with asterisks to show the voltage and current waveforms.

More recently, schematic capture and on screen graphing have become the norm, but the simulation process is still non-interactive - you draw the circuit, press go, and then study the results in some kind of post processor. This is fine if the circuit you are testing is essentially static in its behavior e.g. an oscillator which sits there and oscillates nicely at 1Mhz. However, if you are designing a burglar alarm, and want to find out what happens when a would-be burglar keys the wrong PIN into the keypad, the setting up required becomes quite impractical and one must resort to a physical prototype. This is a shame, as working ‘in cyberspace’ has so much to offer in terms of design productivity.

Only in educational circles has an attempt been made to present circuit simulation like real life electronics where it is possible to interact with the circuit whilst it is being simulated. The problem here has been that the animated component models have been hard coded into the program. Only limited numbers of simple devices such as switches, light bulbs, electric motors etc. have been offered, and these are of little use to the professional user. In addition, the quality of circuit simulation has often left much to be desired. For example, one major product of this type has no timing information within its digital models.

PROTEUS VSM brings you the best of both worlds. It combines a superb mixed mode circuit simulator based on the industry standard SPICE3F5 with animated component models. And it provides an architecture in which additional animated models may be created by anyone, including end users. Indeed, many types of animated model can be produced without resort to coding. Consequently PROTEUS VSM allows professional engineers to run interactive simulations of real designs, and to reap the rewards of this approach to circuit simulation.

And then, if that were not enough, we have created a range of simulator models for popular micro-controllers and a set of animated models for related peripheral devices such as LED and LCD displays, keypads, an RS232 terminal and more. Suddenly it is possible to simulate complete micro-controller systems and thus to develop the software for them without access to a physical prototype. In a world where time to market is becoming more and more important this is a real advantage.

It is also worth pointing out that the processing power of the modern PC is truly awesome. A 300MHz Pentium II PC can simulate simple micro-controller designs in real time, or even faster in some cases. And even where things slow down somewhat, the response time is more often than not useable for software development. If you are serious about this game, you can go out and buy a 2GHz dual processor PC, which is far, far faster. This, then, debunks the other obvious objection to interactive simulation - which it would not be fast enough.