

## Any questions?

If you've got a PC problem or think you could help other readers out, contact **Frank Leonhardt**.

### Modems: in or out?

Very little attention seems to focus on internal modems nowadays: does that mean it is better to get an external one? I can see that I could use an external one on different computers, and it doesn't take up an internal slot. But on the other hand, an internal modem doesn't need to be plugged into the mains, doesn't eat up batteries, and I don't need to find space for it (and the accompanying serial cable) on a cluttered desk. Does the fact that internal modems have their own 16550 UART influence anything? Internal or external speeds (from the reviews I've read) seem to be very similar between different models. Is there any reason to pay a higher price than the cheapest (V.34) model I can find?

**Chris Veness**

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*I don't like internal modems very much. Their main advantage, as you say yourself, is all-in-one-box neatness. High-speed internal modems often benefit from being integrated with a buffered UART (a 16550-compatible) which is useful if you have a standard serial port on your PC, though there is nothing to stop you adding a 16550 serial board to speed up an external unit.*

*What you lose is flexibility. I once tried to stop a friend from buying a cheap*



*An external modem can give a sense of security*

*internal modem but he wouldn't be persuaded. Then his PC died, leaving him to fall back on his trusty Atari ST. He could use the PC's printer, but not the modem.*

*Of course, you may feel that you will be sticking with PC compatibles so this is not an issue. But what bus will your next PC have? PCI? How many ISA boards might you want to transfer to a new machine and which may you have to discard? Many PCI motherboards have just three usable ISA slots and you might have a modem, network card, sound board, scanner and exotic disk interface to choose from.*

### Office installation tip

We have been using Windows 95 for a while. Trying to install MS Office (95 or 4.3) over a network from our CD server just wouldn't work. MS tech support couldn't fix the problem for us. "It's a known problem," they said.

But you can fix it: simply forget about Win95 disk mapping and Network Neighbourhood, and use the File Manager to "connect network drive...". Then it works like a dream.

**Andrew Scott**

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*Then there are the pretty flashing lights on the front. These are rarely available as an external add-on for internal units. It is very useful to be able to look up and see if your connection is still active when your file transfer appears to have stopped. You can walk into a room and spot whether your modem is up to something: if your PC goes mad and starts dialling your mother-in-law instead of CompuServe, you can reach over and switch it off.*

*Give me a real modem, in a proper box with lots of lights, any day. If your desk is really crammed just screw the modem to the wall near your phone socket and use a long serial lead.*

*As for which modem to choose, price is no guide to reliability. Most modems of a given standard will perform at about the same rate on a clear line, but as the going gets rougher the speeds and connections can drop off quickly, as you'll see from some of the high-speed modem group tests in back issues of PCW. The same manufacturers tend to come out top every year and they are not necessarily the household names.*

### Out of bounds

Could tell me of any way in which the available drives can be limited in File Manager? At our school we have a large Novell network, with Windows and applications run from local drives. A user's personal directory is mapped as drive P. Because I have limited each user to 5Mb they will occasionally need to delete some files. But when they use File Manager it would be better if they were unable to access drive C and some of the search drives, and only "see" drive P. Is there a way of doing this in the win.ini file in the same way that you can set restrictions in progman.ini?

**David Waller, The Sandon School**  
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*I can't think of a way to do this simply by fiddling with the INI files. File Manager picks up the drives from MSDOS and it is possible to get DOS to pretend that some drives don't exist. But this wouldn't be of much use because Windows would lose access to itself.*

*However, File Manager does support extensions in the form of DLLs. They are not too difficult to write and it is possible to intercept every file selection made by the user if you wish. By checking to see if any naughty files have been selected you could cause the user to be locked out until a password was entered. Tempta-*

tion could also be removed by disabling the tool bar and drive bar, although as this is achieved using a simple menu option it does not really add to the security.

I'm not aware of any utility which does what I have suggested — I'll leave it with this column's clued-up readership to send in their nominations. An alternative would be to write your own restricted file delete program and not allow access to File Manager.

For real security though, take a look at Windows NT, designed with multiple users and file protection in mind. Users can set up their own Program Manager groups and you can restrict access to all files or directories based on individual users or groups — it's almost as much fun as Unix.

### Retail corruption

I am using WFW 3.11 and a DOS accounts program (Micro Retailer Accounts) provided by a local company. They worked fine together for about nine months, but have recently begun to throw up an error message that the program has "Violated system integrity due to execution of an invalid instruction".

This happens at the same point every time: when switching to a sub-program of the Micro Retailer Program.

**Mark Broadbent**  
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The message means that the CPU has just tried to run an instruction in your software which doesn't exist. Either the program has corrupted in some way, or the fault was always present, which is unlikely as your system has been working for nine months already.

Programs can be corrupted either in memory or on disk. If you have a faulty disk or RAM then the problem would be intermittent and random. A bug in the software could cause the sub-program to be corrupted after it has been loaded, and this bug may have manifested itself only now that you have entered a lot of data. Alternatively, the sub-program may not be loading and the main program may not have a built-in check to make sure it has, resulting in a crash as it executes the first instruction.

My prime suspect, however, is disk corruption caused by some other piece of software. Try running SCANDISK (or CHKDSK for older versions of DOS) and look out in particular for cross-linked clusters. If you find any, seek professional help as your accounts data

### What does it all mean?

Referring to one of your recent articles in PCW, please could you tell me what SIMMS, BIOS and DRAM mean?

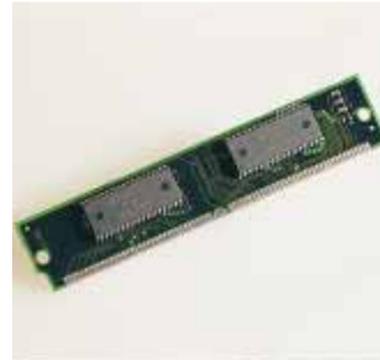
**Asif Mughal**  
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DRAM is Dynamic Random Access Memory. This is the type of memory chip used by your computer to store the information and software on which it is currently working. Data not currently being worked on is stored on hard or floppy disks.

A SIMM is a Single-Inline-Memory-Module, a small circuit board containing several DRAM chips. It is more convenient to have your DRAM in the form of SIMMs because they are easier to fit than several individual chips.

The BIOS is a set of Basic Input/Output Sub-routines. The complex software running your computer gets the BIOS to do all the simple Input and Output operations involving the computer's hardware. As the BIOS software is stored on a chip which is built into the computer itself, it can protect the complex software which is using it from the

idiosyncrasies of your particular hardware. Accessing the hardware by using the BIOS has enabled PCs to be improved over the years while still allowing the complex software (such as operating systems like DOS/Windows, OS/2, or Unix) to run unchanged on the diverse new hardware.



These days you normally buy your DRAM in the form of SIMMs

may be in danger. Backing it up now may not help. Do not let SCANDISK "automatically" repair anything — it will remove your data along with the errors.

If you have no cross-linked clusters, let SCANDISK or CHKDSK fix any other errors and then re-install your software. This might overwrite a corrupted program file and fix the problem. If it doesn't, get a professional to look at your system.

### Drives going cheap

I have been offered some secondhand SCSI drives (11ms access time) cheap, but I'm confused about what I need to connect them up to my PC. What is all this about SCSI kits? I want to connect four SCSI discs and one IDE to my PC which is VESA: what do I actually need?

**Chris Milburn**  
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You'll need a big case, for a start. It is possible to buy special SCSI device cases (with extra power supplies) to go alongside your existing box, but they are expensive.

If you are happy to boot from the IDE drive, then only a basic SCSI card will be needed. The Adaptec 1510A works well for me. You will also need driver software, which should be available with the card. For the 1510A card under DOS, these can be found in Adaptec's ASW-

1210 package (with instructions). OS/2, Windows NT and Windows 95 come with drivers which should support this SCSI board straightaway. Future Domain produces an equally well-supported alternative.

If you don't have a sound board, Creative Labs' SoundBlaster SCSI-II has the same Adaptec controller built in and comes with the DOS drivers that you will need.

You will also need a 50-way ribbon cable with five connectors, which should be available where you bought the SCSI board. If you are mounting the drives in an external box, you should really use an external SCSI cable assembly to make the connection.

### PCW Contacts

Frank Leonhardt is an independent computer boffin who can sometimes be contacted on 0181 429 3047 or via email as [frank@dircon.co.uk](mailto:frank@dircon.co.uk) or [leo2@cix.clink.co.uk](mailto:leo2@cix.clink.co.uk). Letters may be sent to PCW at VNU House, 32-34 Broadwick Street, London W1A 2HG, but individual replies are not normally possible. Please do not ask about cover disks or CD-ROMs.

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**Creative Labs** 01734 344322  
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