

CAN THE ZEP 100 ZAP THE ACORN Z80?

Simon Williams analyses a contender in the Z80 market

IF YOU intend to use your BBC micro for business work, you may well consider expanding the basic machine with a Z80 processor. This not only gives you an additional 64k of memory, but access to the CP/M operating system and a large range of software written for a variety of machines.

Your first thought may be to buy Acorn's Z80 second processor which, together with its associated software, was reviewed extensively in the June to September '84 issues of *Acorn User*.

There's an alternative, however, and one that has been around in various guises for much longer. Torch Computers brought out a dual disc pack, complete with Z80 processor, soon after the release of the Beeb, and more recently the company has started to sell the Z80 board separately under the name Zep 100.

This unit comes complete with four pieces of packaged software and an operating system ROM called MCP (shades of the film *Tron*). It will cost you

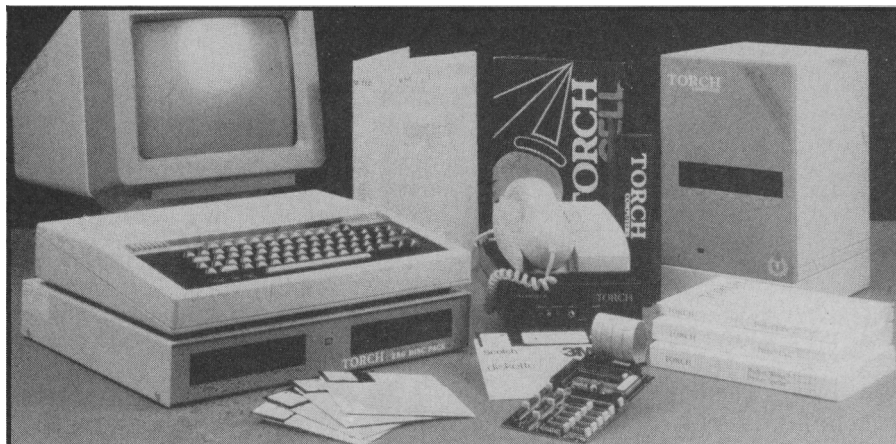
£299, a hundred pounds cheaper than the Acorn product. You'll need a dual disc drive to run with the micro, and you will then have a pretty powerful business system.

The Zep 100 is a Eurocard circuit board mounted with the processor, extra memory and other ancillary chips. A short length of ribbon cable is attached to one end and this terminates with a plug that connects to the Tube socket on the main BBC micro circuit board. The Z80 board is fixed to the

inside of the micro's case by means of three self-adhesive plastic clips. The best way of positioning it is to slide the clips onto it and connect the cable to the Tube socket; you can then decide on its final position before sticking the pads to the top of the case. Once it's fitted, you have to take care when lifting the lid off your micro, as this is now attached to the bottom by the Zep 100 cable.

Although the installation is a bit fiddly, the final arrangement is satisfactory and means that your micro is still contained in one unit. The only other attachment to the micro is the insertion of the MCP chip. This takes over the MOS functions of your micro at switch-on and provides a CP/M-compatible environment for the software to work in. You'll still need an Acorn disc interface, and you can switch back to run standard Beeb software by performing a B-Break break (holding the 'B' key down while pressing Break, and then pressing Break on its own).

The MCP provides quite a few functions of its own, and these are documented in the Zep 100 user guide. This is the thinnest of the five manuals supplied with the package, and details each of the functions on a separate page, giving examples of syntax. The built-in functions include copying Torch-format discs, handling the screen display (changing colours, etc) and printing the time from the real-time clock.



The alternative Z80: Torch's ZEP 100 plus dual disc pack and business software packages

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ACORN AND TORCH SYSTEMS COMPARED

	Prices (inc VAT)	Bundled software	Additional products
Zep 100	£343.85	Perfect Writer, Perfect Filer, Perfect Calc, Z80 Basic	Unicorn hardware range Range of Torch formatted software
ZDP 240 (Zep 100 plus Torch twin floppy disc pack)	£803.85		
Acorn Z80	£399.00	FilePlan, GraphPlan, MemoPlan, Accountant, Nucleus, CIS Cobol, professional Basic, Z80 Basic	Range of Acorn formatted software
Acorn Z80 plus BBC disc pack	£868.00		

SUPPLIERS

Torch Computers

Abberley House, Great Shelford,
Cambridge CB2 5LQ.
Tel: (0223) 841000

Acorn Computers

Fulbourn Road, Cherry Hinton,
Cambridge CB1 4JN.
Tel: (0223) 245200.

This manual also covers the utilities supplied separately on disc, and these include a font generator, a monitor, an RS423 comms routine, disc-map utilities and a music editor. Three excellent music files are included on the disc and the music editor represents one of the few attempts I've heard of put feeling into a micro-generated tune. I've tried most of the utilities and they seem commendably versatile and reasonably robust. The manual could offer a bit more detail of some of them, however.

The three business software packages supplied with the Zep 100 are produced by the Perfect Software Corporation of the US. With names like *Perfect Writer*, *Perfect Filer* and *Perfect Calc* they really are asking for it, but the

packages, while not living up to their names, are certainly high-quality products. *Perfect Writer* distinguishes itself by coming complete with its own spelling checker — yes, *Perfect Speller*. This wordprocessor is a sophisticated beast and, as with most things sophisticated, needs quite a bit of use before you appreciate all its features. It works on an 80 by 30 screen, the bottom two lines being reserved for system status and command input. Entry is by CTRL or Escape sequences, although Torch has patched in a few commands on the function keys.

Torch maintains that most CP/M users will be used to using these sequences from other machines and that they are compatible with the company's larger micros. With a product such as a second processor, however, the user is more likely to have moved up from a 'straight' BBC micro than across from another CP/M machine, and will probably have been brought up on the function keys used by *Wordwise* or *View*.

Perfect Writer maintains a swap file and saves the text every few hundred characters you enter — useful if you lose mains power for any reason, as most of your file will remain intact. The pro-

gram can hold up to seven documents in memory at once, and you can work on any two of these in variably sized screen windows. Text can be transferred from one document to the other and the working documents swapped in and out at will.

The system offers the useful facility of pre-formatted 'environments' in which commonly needed formats are set up with a single command. These include Lists, Verse and Quotations. Each environment can be modified from the default values set. The program can also maintain an index and footnotes to your text and will update them appropriately when you insert new text into a document.

Perfect Speller does what a spelling checker should, although with a distinct American accent. All *Writer's* and *Speller's* actions are carried out pretty speedily — certainly no slower than using *View* — and this is quite an achievement when you consider the Benchtest timings for the Zep 100 (AU, January '85).

Perfect Filer, the database of the suite, is again an extensive program. A database created with it may fill a complete disc — that is, a CP/M disc, which is two disc surfaces on a double-sided

disc. Within that 400k of disc space you may have as many records as you can fit, and each of these may have up to 70 fields and a total of 1024 data characters. Two predefined files are provided on the *Perfect Filer* disc, one for handling a club membership file and the other for an address list. These files are useful for learning how to use the system and for simple filing tasks, but you will probably want to set up files specific to your requirements.

As with *Perfect Writer*, control is via CTRL sequences, although there are fewer to memorise. Setting up the record format is easy as the screen designer allows complete freedom to position fields and their titles anywhere within the record display. The designer is further simplified by the provision of a number of standard field 'templates'. In a similar way to the environments within *Perfect Writer*, *Perfect Filer* provides a standard format for a data field, a name field, an address field and many others. The program has been Anglicised, so there are no problems with zip codes or inverted dates.

Field types may be alphabetic, alphanumeric, numeric or status. A status field is used for single-character entries such as Yes/No answers. Each field must have a tag name, which is used within the record description, and *Perfect Filer* provides a reserved tag for automatically updating a date entry. The finished record can be edited, as long as no data has been entered on the file.

Sorting is carried out using a system of key fields, which are defined when the file is set up. Any number of fields may be defined as keys. A subset of the file may be set up by selectively searching through the database, and may be saved separately to disc. The information in the database may be printed out in a variety of ways, and *Perfect Filer* offers comprehensive facilities to define 'lists' containing these formats. Standard letters produced using *Perfect Writer* may be merged with data from *Perfect Filer*.

The manual takes the form of a series of tutorials and, like the other Perfect Software documentation, is bulky and fairly thorough. None of the manuals includes a precise specification of the capabilities of the software, but each comes with a quick-reference card showing the control key sequences.

Perfect Calc uses overlays and virtual memory techniques allow a spreadsheet of up to 64k to be processed at a time. A sheet containing up to 52 columns by 255 rows can theoretically be created, but you would have room for only the most trivial formulae on a model this size. The width of columns may be adjusted individually

or throughout the model and you can flick through the sheet a row, column or screen 'page' at a time. All the usual controls are provided for manipulating the data in the model, and many of the control sequences are similar to those in *Perfect Writer*.

Formulae may use logical, arithmetic, statistical and trigonometrical functions, and calculation can be ordered by column or row. As with *Perfect Writer*, up to seven spreadsheets may be held in memory at a time and



the screen may be split to display sections of any two of them simultaneously. No graphics facility is included with *Perfect Calc*, but comprehensive formatting facilities to print the information detailed in a model are provided.

The remaining piece of software included with the Zep 100 is Z80 Basic. This is a later version of the interpreter supplied with the Acorn Z80 package and is written by R T Russell, to whom I touch my forelock. There aren't many

people capable of writing a Basic interpreter, and fewer who can take an existing dialect with all the constraints that this imposes and convert it for a different processor.

This Basic is probably as close to the original 6502 version as is possible, and includes a built-in Z80 assembler. It is so well put together that a program written in 6502 Basic can be read into the machine, using one of the disc utilities supplied, and converted directly to run on the second processor. I succeeded in doing this with a couple of programs. Any sections of assembler are, of course, not converted.

The manual for Z80 Basic is thicker than any of the Perfect manuals, and this reflects the amount of information provided. It is good to have one piece of software at the end of an upgrade like this with which you can feel completely at home.

Since the Torch Z80 has been around for longer than the Acorn product, there's a large catalogue of CP/M software available on Torch format discs. This includes accounting packages, communications software (although networking routines are included in the MCP ROM), business graphics and a number of languages, as well as many alternative word processors, databases and spreadsheets such as the league leaders *Wordstar* and *dBase*.

In all there are more than 120 titles. Should you buy the Torch Zep 100 in preference to the Acorn product? It really depends on what you want from your system. The Torch processor has been shown to be slower than the Acorn's Z80 system and the handling of the Tube is less sophisticated. However, when it comes to running applications software it doesn't seem to make a lot of difference. It may also be convenient for you to have the processor installed inside the micro's case.

Where the Acorn product scores is in the amount of bundled software supplied. If you feel you will make much use of *Cobol*, *Nucleus* or *Accountant* it will almost certainly be cheaper for you to go for the Acorn (CIS Cobol alone costs £425 on the Torch). If you will make good use only of a wordprocessor, database or spreadsheet then the Perfect products are well ahead of the Chang Labs packages offered with the Acorn unit.

Both contenders for the Z80 second processor market have a lot going for them and it is always good to have a choice.

TORCHUSER GROUP

Sidelight

69 The Avenue, Wembley, Middlesex.