

# NEW CONCEPTS IN ROM SOFTWARE

for the BBC

Microcomputer



Computer Concepts

## ROM LINK

This is a new system devised especially to take advantage of the BBC Micro's unique ROM handling capabilities. A series of application ROMs will be produced that can, when used together, form a truly integrated suite of programs.

The packages can, of course, be used on their own and do not require other ROM-LINK packages to be installed.

The ROM-LINK system offers two great advantages. Firstly it allows up to 16 separate programs to have data in memory at any one time. This could be data from any ROM-LINK compatible program, and so eventually it will be possible to have, for example, a couple of documents being word-processed, a few spreadsheets, and a set of data for plotting graphs.

## INTER SHEET

### THE ELECTRONIC SPREADSHEET ROM £56.35 incl. VAT

Spreadsheet programs have become one of the most popular micro-computer applications in recent years. They can be thought of as a totally general purpose numeric tool, of use to anyone who has to handle figures, calculate costings, keep control of running costs, or just simple budgeting.

This package contains the ROM, a quick reference card, an introductory manual to spreadsheets and a comprehensive reference manual. Chip fitting instructions and a function key strip are also included.

The program has many quite unique features.

40, 80 or 105 column screen display. The special 105 character screen mode displays more than any other spreadsheet.

Up to 16 spreadsheets may be stored in memory at once.

Data can be transferred from one spreadsheet to another.

Spreadsheet data can be transferred to and from popular wordprocessors such as WORDWISE and VIEW.

This package will integrate directly with other ROM-LINK compatible products, such as INTER-CHART, which can produce charts and graphs of data from the sheet.

Formulae in boxes are tokenised to save space. This means larger than normal spreadsheets can be accommodated.

Main menu enables even the inexperienced user to operate the more complex functions. There is no need to remember long command names.

These are in addition to many other powerful features such as: Variable column widths. Flexible replication facilities. Insert and delete rows and columns. Numbers may be printed in three formats. The number of decimal places is variable from 0 (integer) to 9. Locking/unlocking of boxes. Boxes may be justified left or right for numbers and left, centre or right for labels.

Most of the above features can affect individual boxes, rows, columns or the entire sheet.

INTER-SHEET supports a large range of high precision mathematical functions. These include all the more common functions such as SIN, SQR, TAN etc. but also include special sheet functions like SUM, MAX, MIN, LOOKUP, AVERAGE.

A special form of windowing has been included allowing any row or column to be held on screen as the sheet scrolls underneath.

All in all these features go to make INTER-SHEET the most powerful and flexible ROM based spreadsheet available for the BBC Micro-computer.





With only one ROM-LINK compatible ROM in the machine then up to 16 sets of data can be held for this ROM. It is a simple matter to switch between sets of data or completely different ROM-LINK programs, and all the data remains in memory intact.

The second advantage leads naturally on from the above. It is possible to transfer data from any ROM-LINK package to any other. If only INTER-SHEET is present in the machine, it is possible to transfer data between separate worksheets. If more than one ROM-LINK package is present then data can be transferred between any of these. This data transfer is direct in memory, and does not require the saving of data to disc.

The first two ROM-LINK compatible packages are INTER-SHEET and INTER-CHART. It is hoped that others will be available later in the year.



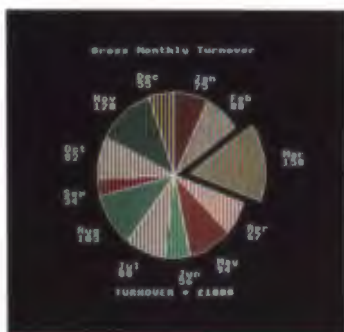
## INTER-CHART

### THE CHART & GRAPH PLOTTING ROM £44.85 incl. VAT

This ROM-LINK compatible program allows practically any data to be presented in graph form.

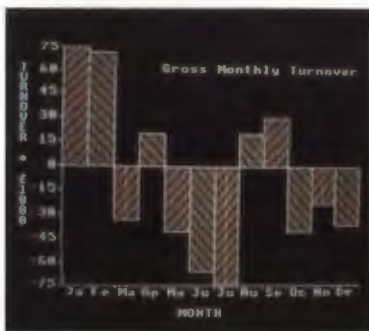
Rows of figures are always difficult to digest, but when displayed as graphs even the most complex data becomes understandable. This program will cope with just about any sort of numerical data. At its simplest level a string of numbers can be entered at the keyboard, and a graph will be plotted.

Because this is a ROM-LINK compatible product it can read data from any other ROM-LINK program. It is especially tailored to INTER-SHEET and so can very easily use spreadsheet data for plotting charts and graphs.



Data can be input to the program from 3 distinct sources. Firstly directly from ROM-LINK compatible packages as described above, secondly, from the keyboard so that data can be manually typed in and thirdly from file. This last option gives almost endless possibilities. For example a BASIC program could save the data or it could come from a word processed document.

Three basic types of graph are supported—the pie chart, bar graph and line graph. Once data has been entered into the program it can be displayed in any of these formats. Multiple sets of data can be combined onto one graph for comparison.



This program supports a full range of mathematical functions, and allows data to include complex mathematical or scientific expressions.

Because it is completely auto-scaling there is no need to worry about how many numbers are entered, nor about their range.

Routines are included for dumping the graphs to EPSON compatible printers, and provision is made to allow dumps to other types of printers.



# THE SPEECH ROM

£33.35 incl. VAT

The normal ACORN speech system allows the computer to speak a hundred or so pre determined words.

This is fine if you only want the computer to speak these words, but in practise it is extremely limiting.

Spoken English is actually made up of a few dozen basic sounds known as phonemes. Any word can be formed by putting the correct phonemes together, and this is the basis for THE SPEECH ROM. The user can specify a string of phonemes so creating whatever words or sentences are required. The ROM is controlled by simple "★" star commands and so can be used from BASIC and most other language ROMs.

A unique feature of this package enables the pitch and the emphasis of words or parts of words to be changed. Because this is not normally possible, computer speech tends to have no expression. THE SPEECH ROM can emphasise a particular syllable and so re-enforce the meaning of a sentence. This feature also enables the computer to ask questions in a more realistic manner.

Another novel feature is that the ROM includes a singing feature, the user simply specifies the phoneme and the note.

This ROM requires the ACORN speech processor to be fitted into the machine. If your machine has the speech system fitted then the processor chip will be there already. If you do not have the ACORN speech system then we can supply the processor chip for £10.00 incl. VAT. This chip simply plugs in like a ROM and requires no soldering.

When operating, the speech ROM requires 2 pages of workspace. This means that PAGE is set higher in BASIC. When not in use no memory is used.



# ACCELERATOR

## THE BBC BASIC COMPILER

£64.40 incl. VAT

This is the most comprehensive compiler of any sort to be made available for the BBC Micro.

It will compile all of BBC BASIC (with the few exceptions listed below), and is the only available compiler which is compatible with BBC BASIC syntax, allowing existing programs to be compiled simply and in most cases without alteration. It is also the only BBC BASIC compiler offering full floating point arithmetic.

Like many PASCAL compilers, ACCELERATOR achieves compact compiled programs by using an intermediate code (G-code) rather than 6502 machine code. This G-code is executed by another part of the compiler. Other compilers produce machine code up to 5 times longer than the original program especially when catering for floating point arithmetic. By using G-code, ACCELERATOR ensures that the object program is compact; in many cases actually smaller than the original program.

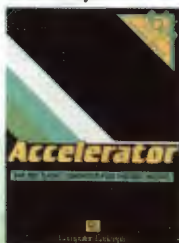
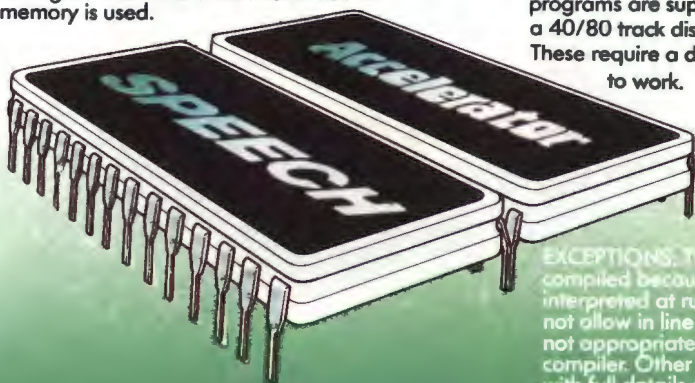
Machine code programs produced directly by some compilers are sometimes faster than intermediate code but, as explained above, they are usually larger. ACCELERATOR normally compiles to the intermediate G-code but a variety of utilities are supplied with the ROM that allow the G-code to be converted into machine code. Machine code programs can only use integer numbers. Other utilities are also supplied that allow the user to create his own sideways language ROMs.

ACCELERATOR therefore offers the user the choice between efficient G-code compiled programs, or larger but faster machine code.

ACCELERATOR is a complete compiler package including 2 ROMs, comprehensive spiral bound manual, disc with utility programs and quick reference card.

Note the machine code convert utility programs are supplied on a 40/80 track disc.

These require a disc drive to work.



**EXCEPTIONS:** The EVAL statement cannot be compiled because this statement must be interpreted at run-time. ACCELERATOR will not allow in line assembly language as this is not appropriate to an intermediate code compiler. Other slight syntax changes together with full details of the speed improvements possible are available from Computer Concepts.



## WORDWISE

£46.00 incl. VAT

Since its launch this has become by far the most popular word processor for the BBC Micro, with over 50,000 now in use worldwide.

The reasons for its success are that above all it is simple to use, and very fast in operation. The more complex operations are menu driven, enabling even those unfamiliar with this software to use the more powerful facilities.

This is a full blown word processor that gives the user total control over text entered into the machine. Simple block move and copy facilities allow any section of text to be marked and instantly moved to any other part of the document.

The user has full control over the page layout, the line length, page length, margin positions etc. Automatic headings and footings can be printed on every page, and automatic page numbering is supported.

WORDWISE will work with all filing systems such as disc, cassette and the new ADFS. It works with any printer that is compatible with the BBC machine and is able to access the special features of any printer, (italics, subscripts etc).



WORDWISE is supplied with a tape containing an example document, and a typing tutor program, and a simple to understand manual.

### Upgrades—

Existing WORDWISE owners can upgrade to WORDWISE-PLUS for only £21.00 + VAT. (£24.15). Please return the old WORDWISE package (especially the chip) back to Computer Concepts, with payment.

We will then send you a complete WORDWISE PLUS package.



## WORDWISE PLUS

£56.35 incl. VAT

This is an enhanced and extended version of WORDWISE. This still has WORDWISE as its core and so acts in the same user friendly way, but has several new and unique features that will appeal to the advanced word processor user.

It has been extended in two distinct ways. Firstly the existing features have been enhanced and so, for example, it saves and loads text faster. The search and replace now supports wild cards, and there are a few new embedded commands that extend its printer handling capabilities.

Secondly a full feature BASIC-type programming language has been added. This gives the user the ability to extend the features and functions of this word processor almost infinitely, and to tailor it to the specific needs of the user.

A few examples of what is possible with the programming language are included on a tape supplied with the package. These include a mail merging program allowing names and addresses to be added to a standard letter. A simple index generating program. Two column printout, so text is printed as two columns across the page. Continuous processing that allows the user to work on book sized amounts of text.



WORDWISE PLUS can hold up to 10 of these programs in memory at once, or alternatively, it can support up to 10 separate documents in memory at once.

## COMMUNICATOR

£69.00 incl. VAT

## AND TERMI II ROM

£33.35 incl. VAT

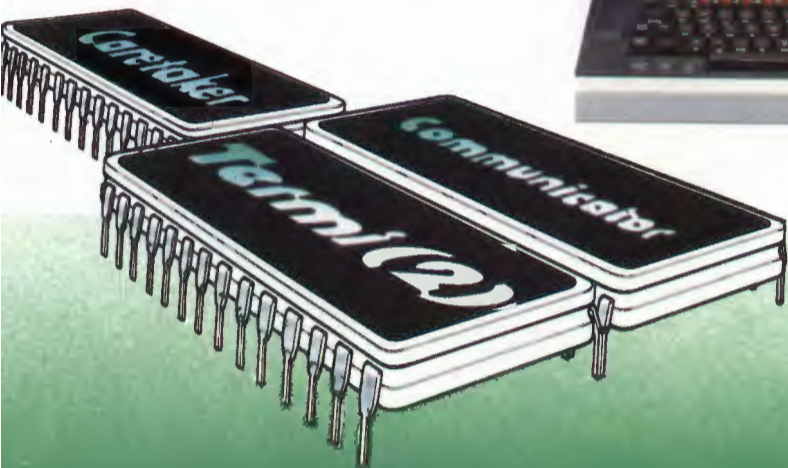
COMMUNICATOR and TERMI II are designed to turn a BBC Micro into an easy-to-operate communications terminal. The BBC terminal can be used to connect to other BBC terminals, or most other micro, mini or mainframe computers with a serial RS232 interface. Connection can either be direct or via a modem. The rate at which information is transmitted or received is easily set within either ROM. TERMI II operates up to 4800 Baud and COMMUNICATOR operates up to 19200 Baud with full handshaking.

Both ROMs allow files to be transmitted from disc, or a copy of incoming data to be sent to a file or to a printer, with the ability to pause these operations at any point.

TERMI II is an 8K ROM which can operate as a semi-intelligent terminal e.g. VT52 (and the user may alter many of the actions of the terminal), it can operate as a slave BBC graphics terminal, or simply as a dumb terminal. 40 or 80 column operation is selectable whilst online.

COMMUNICATOR is a 16K ROM designed to operate as a full VT100 terminal (please ask for a specification that details the VT100 operation). 80 column operation only excludes its use on poor quality colour TV sets.

Note: Neither TERMI II nor COMMUNICATOR are suitable for use on 'PRESTEL' type systems, though they are widely used on electronic mail systems. Please note that the actual MODEMS used for connection to PRESTEL/MICRONET are suitable for use on other mail systems or bulletin boards etc.



## CARETAKER

THE BASIC UTILITY ROM

£33.35 incl. VAT

This ROM includes 17 new commands especially suited to the BASIC programmer.

★RENUMBER can renumber parts of programs and move them to any other position in the program  
★SQUASH can compact a program removing redundant spaces or REMs and putting as many statements on each line as possible.

One special feature allows single key entry of BASIC keywords—exactly the same as the ELECTRON. This speeds up the program entry enormously.

★EXCHANGE can search and replace any occurrence of a string.

★INSERT allows any routine or program on tape or disc to be inserted into any point in the program, and ★PARTSAVE can save any part of a program.

★TABSTOP allows the setting of true TAB positions. Once defined pressing the TAB key moves the cursor to the next TAB position. This will work in most programs (e.g. WORDWISE).

The above list is only a few of the commands—others allow the saving/loading of function keys, variable listing, status display, merging two or more programs etc.

Supplied with full manual, fitting instructions and special stickers for the key fronts.





## PRINTMASTER

SCREEN-DUMP & PRINTER  
SUPPORT ROM  
£33.35 incl. VAT

This is a sophisticated printer handling ROM enabling the user to simply access the special features of their printers.

Two versions are available, the normal PRINTMASTER which supports the EPSON MX, RX and FX range and EPSON compatible printers. The second version is for the STAR Delta, DP, Gemini and Radix printers. All commands in the ROM must be preceded by an asterisk and can be used like all normal operating system commands from BASIC programs etc. It is also possible to use them from other language ROMs.

PRINTMASTER supports three types of screen dumps. The most flexible (★GDUMP) allows any graphics on the screen to be dumped onto the printer. This will operate in any graphics mode, the colours being displayed as shades. Any part of the screen may be printed at any position on the paper in any one of four orientations. It is also possible to magnify the screen dump by any factor ×2, ×3, ×4 etc.

A special feature allows true Mode 7 screen dumps with TELETEXT text and graphics, colours (as shades), double height etc.

★TDUMP allows any text mode to be dumped and ★FDUMP will automatically print the contents of a file on disc to the printer WHILE the BBC machine is doing other things, running other programs etc.

★WINDOW allows the user to interactively define a graphics window, this controls the part of the screen printed in ★GDUMP. A very much easier method of defining graphics windows than the normal VDU statement.



## DISC DOCTOR

GENERAL UTILITY ROM  
£33.35 incl. VAT

This general purpose ROM adds 20 new commands to the BBC Micro. Most of these are concerned with disc operation although some of the commands are totally general purpose.

The extensive range of disc commands includes a disc search routine, a sector editor allowing any byte to be changed on the disc. The built-in formatting has a special option allowing dual catalogues on each side of the disc, so the user can have up to 60 files per side—almost twice the normal.

Two commands allow the recovery of data direct from the disc, helping in the restoration of deleted or corrupted files.

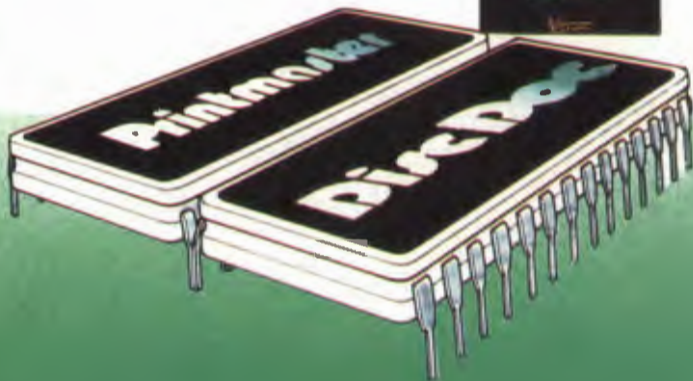
★JOIN allows two or more files to be joined together on the disc.

★PARTLOAD allows part of a file to be loaded into memory.

The more general purpose commands include two memory search routines. One will find any sequence of bytes in memory and enter the ★MZAP memory editor when found. The other will list the lines of a BASIC program containing the search string. ★SHIFT can be used to move sections of memory around while ★MOVE will move BASIC programs from one PAGE to any other.

A very powerful disassembler is included as well as two routines to automatically transfer programs from tape to disc and vice versa. Finally ★EDIT will list out the definition of any function key for editing.

The ROM contains a full help menu listing all the commands and their syntax.



# GRAPHICS ROM

## THE GRAPHICS EXTENSION ROM

£33.35 incl. VAT

This utility ROM includes over 28 new graphics related commands. These can be typed in like any normal commands and can, of course, be included in BASIC programs. The commands are split into 3 distinct areas.



### 1.

#### Sprite Graphics

These are multi-coloured shapes up to  $24 \times 24$  pixels in size.

Once a sprite has been designed (using in-built routine) it can be plotted at any position on the screen and easily moved around. A sprite can also be part of a 'film'—a sequence of frames allowing animation. Up to 32 sprites or 'films' can be active on the screen at any time. A 'film' can contain up to 47 frames, each frame being any sprite image.



### 2.

#### LOGO 'turtle' graphics.

By using simple FORWARD, BACKWARD, LEFT and RIGHT commands a 'turtle' can be moved very quickly around the screen, producing intricate patterns by the most user-friendly means. Including these commands in structured BBC BASIC programs provides a system faster and more powerful than many of the packages currently used to demonstrate the LOGO language.



### 3.

The third section consists of a large number of general purpose commands such as:

★FILL which will fill an area on screen.

Fast circle and arc drawing.

3D graphics routines allowing X, Y, Z co-ordinate plotting.

Large character printing in a range of patterns.

Scaling—allowing any part of the screen to be expanded or diminished.

A rotate command that will rotate all plotting by any angle around the origin.



Because this is a ROM, all the commands are instantly available. It has a built-in help menu showing the syntax of all commands. Supplied with a comprehensive manual and step-by-step fitting instructions, suitable even for the inexperienced.



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