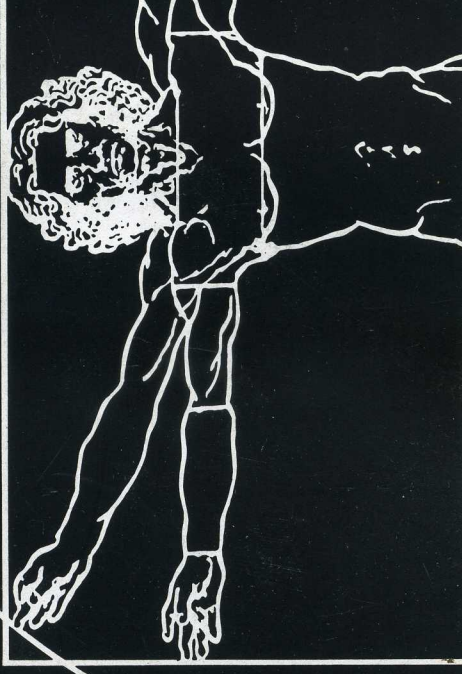


DATABASE SOFTWARE

# Master SCAN

User Guide

Amstrad  
PCW  
8256/8512



### What is MasterScan?

MasterScan is a complete, integrated package with which you can transfer a faithful digitised representation to your computer screen of any black and white image on paper, and store it electronically on disc as a picture file.

The digitising technique has been known for a long time, but until recently the methods employed to achieve it had required such sophisticated video technology that cost alone kept it well beyond the reach of the average home or professional micro user.

The advent of optical scanning has changed all this, and now the MasterScan package makes it available at a price affordable even by hobbyists by cleverly doing away with the need for both specialist knowledge and dedicated scanning equipment.

MasterScan manages this by ingeniously adapting your dot-matrix printer for the purpose, and includes all the necessary hardware and software interfacing to your machine, so you have all you need to simply plug in and go.

### The Package

The complete package you receive should include:

- A precision-engineered optical scanner
- An interface box to connect to your PCW8256/8512
- The MasterScan software on 3in disc
- A piece of sample art to scan

The digitiser has its own built-in RS232 interface box which can be plugged into your computer in one easy move. This has a through connector, so that when you're using the scanner you'll still be able to have additional hardware and peripherals – such as a mouse – connected at the same time.

## How it works

The scanning device attaches to your printer head, and while travelling back and forth focusses a beam of light on to the printed page, measuring the intensity of the light reflected back.

The interface box codes the signal into a binary form, and this data is in turn converted into a screen image by the software. The PCW cannot display pixels of different intensity – so shades of grey can only be captured by adjusting the density of pixels on the screen. The program uses a complex algorithm to determine this density by averaging out the data coming from the interface.

There is also a control knob on the side of the box which allows you to vary the contrast during a scan, so you can make your screen image lighter or darker as you wish.

## Uses

Although the package is self contained, allowing you to copy, save and print images, it becomes a far more flexible and powerful tool when used as a complement to either desktop publishing or art software.

This is particularly true with the former, since MasterScan brings to budget desktop publishing the ability to merge photographic material with text and artwork on the same sheet of paper, the whole of which can then be output using only a dot-matrix printer. Scanned images can be used to build up your own library files of clip-art on particular themes, for use with DTP programs.

## Compatibility

MasterScan has the facility to handle picture files of various different formats. This means you can create pictures which will load into MasterScan's sister art program MasterPaint, as well as the following three popular DTP packages:

- The Desktop Publisher (Database Software)
- Fleet Street Editor Plus (Mirrorsoft)
- Newsdesk International (Electric Studio)

The software's disc utilities will also let you convert files from one format to another by simply resaving them under the intended new format.

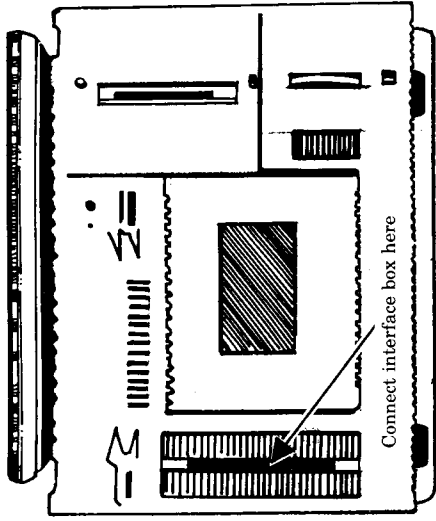


Figure 1: Serial port

## Installation

To attach the interface box to the Amstrad, make sure the PCW is turned off and plug the connector at the end of the flat cable into the serial port at the back of your monitor, as illustrated in Figure 1.

Another narrow lead extends from the opposite side of the box, with a smaller box on the end. This is the scanning head. If you remove the front cover from your PCW printer you will find this clips snugly over the printing head from above. Figure 2 shows the idea. Once you have taken out the printer ribbon your MasterScanner is ready for use and you can turn on the PCW. Never attach or remove

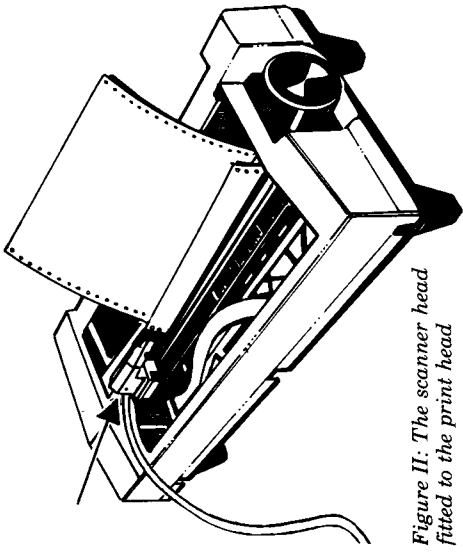


Figure 2: The scanner head fitted to the print head

the interface while the machine is turned on as this can cause damage to your hardware.

## Getting started

Your MasterScan disc is not copy protected, so for safety's sake you are advised to make a back-up copy immediately using the Diskkit utility supplied on side 2 of your CP/M master discs, then store the original disc away safely.

To run MasterScan boot up CP/M, insert your MasterScan disc and type:

**SCAN**

followed by Return. The program will take a few seconds to load, then you will be presented with the

Scanner menu, shown in Figure III. You can access all MasterScan's facilities from here.

To scan in a picture from a sheet of A4, load the paper into the printer with its right-hand edge at 80 on the bail bar as you would when printing, and make sure the top of the image you wish to scan is just below the scanning head. For a scan of average darkness, set the contrast control on the interface box so the little white marker is in a two o'clock position.

Then choose **Scan picture** from the menu and off you go. Your picture will appear line by line on the screen with each pass of the scanner head.

## The program Menus

MasterScan is entirely menu driven. This means that the program is operated by picking the actions you wish to carry out from lists presented to you as you go along.

Sometimes choosing an option may involve simply pressing a particular letter key, and in these circumstances the appropriate keys will be displayed in a banner across the bottom of the screen. Most of the time however, you will pick menu options by means of a highlight or bar cursor.

When you are first presented with a menu, the cursor is always on the top option in the list, and you can move it up and down, and across from left to right in some cases, using the arrow keys. Picking an option from a menu is as simple as moving the cursor over your choice and pressing Enter.

## Scanner Menu

### Scan picture

This is MasterScan's main menu, and through it and the sub-menus within it you can access all the program's facilities, as described below.

Starts to scan whatever is in the printer under the scanning head. Before scanning, the print head adjuster should be moved to its maximum setting so that the head is as close as possible to the image being scanned. When a scan is finished you will be prompted with:

#### Scan finished - [K]keep or [S]crap?

If the image on the screen is a good one and you wish to retain it to save, press K, otherwise press S

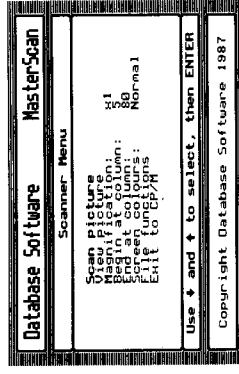


Figure III: The scanner menu

to scrap it. A confirmation of your action will be given, and pressing any key will return you to the Scanner menu.

It is possible to abort a scan at any point by pressing the Stop key, and this allows you to scan just as much of a piece as you like. Again you will be asked whether you wish to keep or scrap the image scanned so far.

The printer can be controlled and reset at all times in the usual way, by means of the **Ptr** key and the options on the printer status bar which appears along the bottom of the screen.

## View picture

Allows you at any time to take a look at the picture currently held in memory either as the result of a scan which has been retained or a picture file you have loaded. A colour inverted picture can be dumped to the printer from the viewing screen by pressing **Extra+Ptr**. To return to the Scanner menu from the view screen press any key.

## Magnification

This controls the resolution and hence the magnification of the image you scan on to your screen.

Understanding the concept of resolution is essential if you are going to produce good quality scans. Put in its simplest terms, resolution is a way of expressing how much detail there is in an image per unit area, and this is usually expressed in dots per inch (DPI). Within the context of your computer screen one dot is represented by one pixel. (The PCW screen has 720 columns and 240 rows of pixels – a total of 172,800 pixels in all.)

When a picture is scanned at twice the normal resolution (200%), twice as many pixels are needed to represent each point on the picture, so the screen image appears magnified by a factor of two. Similarly, 300% resolution will produce an image three times as big, and so on.

You cannot change the size of your screen however, so the greater the magnification factor used to scan a sheet of A4, for instance, the less of

that sheet you will be able to fit on to the screen. This makes high-resolution scanning slightly tricky, but the problem can be remedied to some extent by reducing the range of movement of the scanning head. (See the column range options later.)

To choose a particular magnification factor move the highlight cursor to the **Magnification** option and press **Enter** until the factor you require is shown. The default is **x1**(100%) as you would expect, but you can also opt for **x2** (200%), **x3** (300%), **x6** (600%) and **x½** (50%).

Here you can specify the column number on the printer bail bar at which you wish a scan to start. The default is column 5, because this is the position the scanning head is in when the printer head is at its furthest left.

To alter the setting move to the **Begin at column** option with the highlight cursor and press **Enter**. A smaller cursor will appear on the right, and you should delete the current column setting with the **Del** key and type in the one you require.

Being able to reset the range of a scan with this and the **End at column** option can be of great use when scanning at higher than 100% resolution. It allows you to concentrate a scan on the particular area of a picture you want, and thus ensures it all fits on to the PCW's screen.

## Begin at column

## End at column

This allows you to specify the column number on the printer bail bar at which you wish **MasterScan** to finish scanning. It works exactly like the **Begin at column** option.

## Screen colours

When the highlight cursor is over this option, pressing Enter toggles the screen colours between **normal** and **inverse**.

## File functions

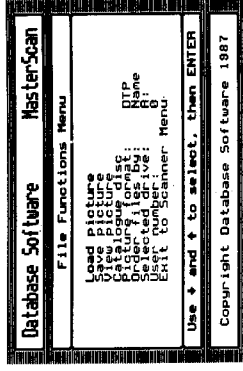
Takes you to the **File functions** menu.

## Exit to CP/M

Lets you quit MasterScan and return to operating system level. You will be asked for confirmation: Press Y to return to the CP/M prompt, or N if you wish to continue in MasterScan.

## File menu

This brings up a sub-menu containing all MasterScan's file and disc handling features. There are facilities to load, save, and view picture files, change file



formats, and switch between different drives and user areas.

## Load picture

Allows you to load a picture file from disc. Choosing this option brings up a catalogue of all the picture files with the currently selected graphics format.

Along the bottom of the screen you will see a string of question marks followed by a full stop and the currently selected file format extension. This is to allow you to load a file by typing in its name in place

of the question marks then pressing Enter.

If you prefer, you can choose a file from those catalogued using the arrow keys. Pressing one of these causes a bar cursor to appear which you should steer until it is over the file you wish to load, then press Enter.

Allows you to save to disc, as a picture file, the scanned image currently in memory. The picture will be saved in the picture format currently selected and with the default extension appended to filenames by the art or desktop publishing program which uses that format.

For MasterPaint, The Desktop Publisher and Fleet Street Editor Plus these extensions are .PCP, .GRF and .G, respectively. Newsdesk International files do not have a standard extension. You may deliberately save a file with any extension you wish by overwriting the program's choice, but this would mean MasterScan would not be able to recognise that file's format.

This option also catalogues all the files on disc saved in the currently selected format, so you don't accidentally overwrite files by using the same names twice. As with the **Load picture** option, along the bottom of the screen you can type in the name under which to save a file, or if you wish to re-save under an already existing name, select the appropriate one from the catalogue using the cursor bar and press Enter.

This is exactly the same as the option of the same name in the Scanner menu. It is available in both menus for convenience's sake.

## Catalogue disc

Brings up a catalogue of all the filenames on the current disc, including non-picture files. Pressing A will display the contents of drive A, and pressing M the contents of drive M. Pressing the Exit key returns you to the Scanner menu.

## Picture format

Allows you to select a particular picture file format from those catered for by MasterScan: The Desktop Publisher, MasterPaint, Fleet Street Editor Plus and Newsdesk International.

To choose a format, move the highlight cursor to this option and press Enter until the one you want is displayed on the right.

The format chosen here determines the effect of the **Load picture** and **Save picture** options. For example, if you pick Desktop Publisher format this becomes the default throughout, so that **Load picture** will only catalogue Desktop Publisher files, as will **Save picture**, and any pictures saved will be stored in this format.

In effect this means MasterScan can be used as a file format converter: To change a file from one of the available formats to another, simply load it in its current format then re-save it under the format you require.

## Order files

This option allows you to choose the order by which the files on disc are catalogued. You can list them either in filename order or filename extension order.

To choose a display order, move the highlight cursor to this option and press Enter until the order you require is shown.

## Selected drive

Allows you to choose drive A or drive M as the default for all file and drive operations. To choose a drive, move the highlight cursor to this option and press Enter until the one you require is displayed on the right.

## User number

Sets the CP/M user area number. Anyone familiar with CP/M will know that it allows 16 user areas (0 - 15), the default on boot-up being area zero. All files created under a particular user area can then only be accessed while that area is current.

To choose a number move the highlight cursor to this option and press Enter until the one you want is displayed on the right.

## MasterScan at its best

MasterScan is extremely easy to use and requires no specialised knowledge, but the quality of your scans can be greatly enhanced if you make a habit of following a few practical guidelines. The following tips should help you get the best results:

- Ultimately the best way to ensure high-quality scans is to use high-quality originals. So always use the best available, and if this involves photocopying, make several copies and choose the best.
- The sharper the contrast between an image and its background, the clearer the scanned image will be. So jet black on pure white will give the best possible results.
- Glossy surfaces cause reflection and therefore tend

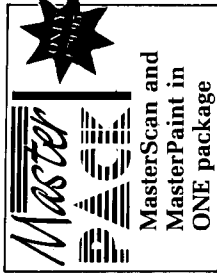


# The perfect companions for The Desktop Publisher



A new and incredibly low-cost optical scanner which is simply attached to the PCW 8256/8512 printer head.

Now you can reproduce any picture on screen in seconds by feeding the drawing through your printer. It's all you need to capture logos, cartoons, maps and much more!



A superb feature-packed art program, with the additional facility to load in scanned images from MasterScan.

You can fine tune the drawing using the zoom feature, remove superfluous detail, add text, and much more. Before you know it you will have created a whole new work of art.

to undermine the accuracy of what the scanning head picks up. So avoid scanning shiny originals where possible, but if you have no alternative take a photocopy first and work from that.

- If you find an apparently good original scans very poorly, this could be because the ink is water based and so not opaque enough under the light from the scanning head. Take a good dark photocopy or go over the lines with blacker ink to get round this.
- Folds and wrinkles in an original will often show up as black lines in a scan. Try photocopying then painting out the troublesome areas with liquid paper such as Tippex.
- If you need to scan something too small to pass round the printer roller, tape or paste it to a larger sheet of paper, making sure it stays completely flat. If you will not lose out on detail, photocopy this and use liquid paper to paint out the black lines which may appear where the original has been stuck on.
- You can put precise finishing touches to a scanned image by loading it into a desktop publishing or art package (such as The Desktop Publisher or MasterPaint) then editing pixel by pixel using Zoom or Magnify facilities.
- Crop pictures tightly when 'pasting' them into desktop publishing files, ignoring the background detail. Have a browse through a few magazines or newspapers for hints on composition generally.

**NOTE:** Please try to remember and respect the copyright of any artwork you scan, and if in doubt contact the publisher concerned.

Please send me:

- MasterScan (£69.95)\*
- MasterPaint (£19.95)\*
- MasterPack (£79.95)\*

\* Add £2 Europe (inc. Eire) £5 Overseas

- Cheque enclosed payable to Database Software Ltd.
- Please debit my Access/Visa card:

Expiry date: \_\_\_\_\_

Packages run on Amstrad PCW 8256/8512 only

Name \_\_\_\_\_

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Send to: Database Software,  
68 Chester Road, Hazel Grove,  
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**£1,000  
in prizes**

# WIN a trip to Venice

## How would you like to fly out to one of the most beautiful cities in the world?

Database Software, in conjunction with Citalia, the leading Italian holiday company, are offering a week for two people to Venice — home for some of Italy's most famous art treasures. And there's some top-quality software for the runners-up.

All you have to do is use MasterScan to capture a piece of artwork and use it in an interesting or entertaining way to promote a holiday in Italy.

For example, you could scan a picture of the Leaning Tower of Pisa and add a suitable caption.

Remember to keep the advert simple and uncluttered. You will get many good ideas by scanning (no pun intended) through any glossy magazine.

You can submit as many adverts as you like, as long as you attach them all to the coupon below.

The closing date is March 31, 1988.

### 1st prize:

**Seven fabulous days in Venice for two people — worth £700!**

### 10 runners-up prizes:

**The Desktop Publisher from Database Software**

## ENTRY COUPON

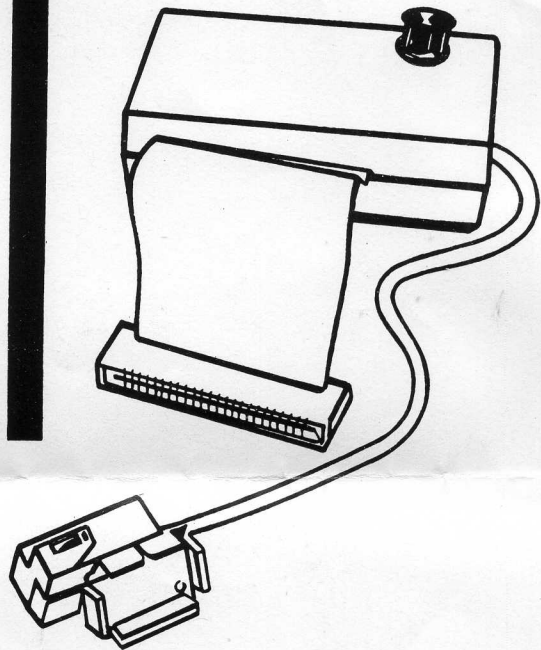
Name.....  
Address.....  
Postcode.....

*Please indicate the software you used to create your entry:*

Send to: MasterScan Competition, Database Software, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

Position scanning head here

Master  
SCAN



*Here's an opportunity to see MasterScan in action – straightaway. Just feed this sheet into your PCW8256/8512 printer with the scanning head at the position shown (please refer to the manual for precise instructions) and the picture will appear line by line on your PCW screen.*