



the advanced
design package
for
128k amstrad
opc computers

manual

INTRODUCTION

MICRODESIGN is designed to run on the AMSTRAD CPC range of micro-computers:

- CPC 6128
- CPC 664 with 64k RAM extension
- CPC 464 with disc drive and 64k RAM extension

Program Structure

MICRODESIGN is a fast and versatile drafting package designed to produce graphic artwork and technical drawings on a dot-matrix printer. It consists of five sections or 'pages':-

1. **Layout page:** for selection of paper format (A4 upright, A4 sideways, or strip format), and for manipulating blocks of drawing (copy, move, and erase).
2. **Design page:** for drawing operations including icons, lines and shapes, fill, text, and a zoom facility for editing at half-pixel resolution. Icons are selected from three sets of 22 user definable icons.
3. **Printing page:** for printing the drawing on IBM/Epsom dot-matrix printers. Options include 3 scales, light or dark shades, high-speed or accurate styles, margin setting and multiple copies.
4. **Filing page:** for saving and loading drawings and icons. File catalogue, rename and erase operations are provided.
5. **Icon Editing page:** for designing and editing icons. Three sets of user definable 'icons' are available directly from the Design page. There are two sizes of icon: 16 x 16 and 24 x 24 pixels.

The Screen

Each page of MICRODESIGN is divided into four windows on the screen, and in general each window performs a similar function on each page.

The top left window displays the drawing and all design work is done here.

The top right window displays the menu from which all operations for the current page are selected. Some operations invoke a pulldown menu from which further operations may be selected.

The bottom left window displays the icons, and occasionally messages. The icon set can be removed on the Design page to allow a larger area of drawing to be displayed.

The bottom right window displays options available on the functions keys f1 to f9. These change according to the operation in progress.

In general, the default state for each page (such as when it is first displayed) will leave the cursor in the drawing area (top left window).

The Keyboard

The keyboard layout has been carefully thought out to make the package quick and easy to use. However, as with any advanced applications package, it may take a little practice to become familiar with all the available functions and the best ways to use them.

All operations can be accessed by 'key-letter' or by the 'one-hand' system to be described later.

One of the most powerful features of MICRODESIGN is the ability to 'Undo' the last operation, enabling the user to try out different shapes, patterns, files etc. in different positions, before committing them to the 'paper'.

Mouse: MICRODESIGN can be used with AMX (and compatible) mice.

Amendments for version 1.1
The "PRINTER" program on
side A will allow you to
customise Micro Design to
work with many non-standard
printers. All the ICON and
FONT files are on side B of
the disc. Micro Design is
great with a mouse! Order
your MASTER MOUSE now from
SIREN SOFTWARE. Only £49.99
including CHERRY PAINT. The
mouse is fully AMX compatible.
Micro-Design Extra is now
available at only £12.99

GENERAL OPERATION

Switch on the CPC computer.

Insert the MICRODESIGN disc.

Type **RUN"MD 'Return'**

(the loading screen is displayed, then MICRODESIGN is entered at the layout page.)

The Menu...X

The other pages are always accessed via the pull-down menu.

Using the **key-letter** system this is 'X' then 'D' or 'I' or 'F' or 'P' (or 'L').

Note that the Filing page is not initially a complete page, simply a change of operations available.

Now load a drawing from the disc. This is 'X' 'F' 'f1' 'Return' 'Return'. This will load a drawing which will be seen in the middle of the paper on the layout page.

Now go to the Design page ('X' 'D') and try out the basic key-functions as follows:

The Key-Functions

The **↑↔** keys control the cursor (as normal).

The **Ctrl** key is a speed change key for the cursor when held down. It makes the cursor jump in steps of eight pixels, which is useful to remember when measuring shapes on the screen.

The **Shift** key, used with the **↑↔** keys, scrolls the paper. Ctrl may be pressed as well, for fast scrolling.

The Icon table at the bottom of the screen can be toggled on and off using **Ctrl/Esc**, for a larger drafting area.

Now scroll to a blank part of the paper.

The **Space-bar** plots points. Holding it down and moving the cursor draws lines. Note that two cursor keys can be held down at once to move diagonally.

These are the basic key functions. The other functions are covered in the appropriate sections, and a full list, for reference, is given in Appendix One.

Key-Letter Operation

Each of the operations in the right hand menu may be selected by a single key (listed next to the operation on the menu). All key-letters in a single menu are unique, hence Kopy is selected with 'K' to avoid confusion with Circle.

One-Hand Operation

The $f\emptyset$ key and the [.] key are called 'DO' and 'UNDO' respectively.

The $f\emptyset$ key is a multiple function key, and is used to advance, select, and fix ...

EXAMPLE: from the Design page,

$f\emptyset$	to put the cursor in the right hand menu,
$\uparrow\downarrow$	to select the Icon operation by moving the cursor box until it is over 'Icon',
$f\emptyset$	to return the cursor to the drawing area as an Icon,
$\uparrow\leftrightarrow\downarrow$	to position the Icon on the drawing,
$f\emptyset$	to 'fix' the Icon on the drawing and exit from Icon operation.

The [.] key can be used to undo the last $f\emptyset$ key-push.

EXAMPLE: if, in the last example, the icon was fixed in the wrong place, then ...

[.]	to unfix the Icon,
$\uparrow\leftrightarrow\downarrow$	to reposition the Icon,
$f\emptyset$	to refix and exit.

If, on the other hand, it is decided that an Icon is not required, then ...

[.]	to unfix the Icon,
[.]	to cancel the Icon operation and exit.

It is only possible to undo operations as far back as the previous fix or last scroll.

This may seem complicated at first – with a little practice it will become obvious.

Almost all the operations in MICRODESIGN can be carried out using the $\uparrow\leftrightarrow\downarrow$ keys, the $f\emptyset$ and [.] keys, the f1-f9 keys and the **Enter** key, *all with the right hand.*

This dramatically reduces the operator eye strain and fatigue during drawing operations, as there is no need to keep looking down at the keyboard and back to the screen again.

Mouse Operation

The mouse movement and three buttons are used to emulate key-strokes from the keyboard, so it is not necessary to have a mouse to use MICRODESIGN to its full extent.

All the major functions and operations in MICRODESIGN can be accessed using the mouse.

Mouse movement	cursor keys $\uparrow\downarrow\leftarrow\rightarrow$
Left mouse button	f0 key
Middle mouse button	Space-bar
Right mouse button	[.] key
Hold down Right button, then press Left button	Enter key

A special mouse function allows the f1-f9 options to be selected using the mouse:

Hold down Right button, then press Middle button to put the cursor in the bottom right options window. Now ...

Middle button	select option.
Left button	select option then leave options window.
Right button	leave options window.

THE DESIGN PAGE

The operations available on this page are listed on the right of the screen. The square in the bottom right of the screen represents the nine function keys **f1-f9** which control the options for each operation. The bottom of the screen displays one of the sets of icons available. Pressing **Ctrl/Esc** switches the icons display on or off.

Points can be plotted with the **Space-bar**. The options **f1, f2, f3** select the ink type ... **f1**-black, **f2**-white, **f3**-exor (black on white or white on black), and **f4, f5, f6** select the point size... small, medium, large.

The operations can be selected by **key-letter** or by **f0, ↑↓, f0**.

Line. Selecting the Line operation and moving the cursor draws a line between the cursor and the original position. Control can be flipped to the other end of the line using the **Space-bar**. A final **f0** fixes the line on the paper. The options: **f1, f2, f3** select the ink type as before, and **f4, f5, f6** select solid or dotted lines.

Angle is an extended version of the Line operation. As before, control of the end points of the angled line is flipped with the **Space-bar**. The direction of the angle can be flipped using **Ctrl/Space-bar**. Use **f0** to fix. The options are the same as for line.

ICONS. The **Enter** key enables the cursor to select an icon from the icon table and the function keys to manipulate the selected icon. Keys **f1, f2, f3** select one of three icon sets, and keys **f4, f5, f6** respectively rotate, mirror and turn the icon negative. Pushing the **Enter** key again returns the cursor to the drawing. (If the Icon table was switched off using **Ctrl/Esc**, it is turned on temporarily when **Enter** is pressed).

Icon. Selecting Icon turns the cursor into the selected icon (**Enter** to change icon) which may now be positioned using the **↑↓** keys and fixed on the paper by pushing **f0**.

The options keys **f7, f8, f9** select opaque, transparent, or exor. This describes the mode in which the icon is placed on the paper: Opaque means that everything behind the icon will be erased; Transparent means that everything behind the icon will remain; an Exor means swop black and white inks where icon and background overlap.

The option keys **f1-f4** are associated with the special alpha-mode for icons. This is explained at the end of this section.

Rectangle: size and position can be controlled using the cursor to move two of the corners of the rectangle. The options **f1**, **f2**, **f3** select the outline style black, white or exor (or all off for no outline).

SOLID: Rectangles and the other 'shape' operations can be 'solid' (ie filled-in). Keys **f4**, **f5**, **f6** select black, white or patterned solid (or all off for just outline). The fill-pattern is a repeated icon, selected as normal in the icon table. Keys **f7**, **f8**, **f9** select opaque, transparent, or exor.

When solid is selected, the outline-cursor has lines across to clarify the selection. Note that the outline option may be turned off only if the shape is solid, and that the solid option may be turned off only if the outline is on.

Circle operates in the same way as rectangle, except that there are three control points to flip around: the middle, to position the circle, and the top or the side to change the size of the circle. The options are the same as for rectangle. (Circles appear not quite circular on the screen – this deliberate 'pre-squashing' is to compensate for non-square printer pixels so that circles really are circular when printing.)

Note: Drawing 'off the screen' is not allowed; very large shapes (eg. circles) must be drawn in several stages.

Oval and **Diamond** operate in a similar fashion to circle.

Triangle is different in that all three corners start in the same place, and must be moved/flipped around to form the triangle.

Flood will fill a bounded area with solid black, solid white, or a repeated icon pattern. The keys **f4**, **f5**, **f6** select black, white or patterned respectively.

Block: this is the initial operation for marking/bounding an area to be Erased, Moved, Kopied, or Stored. The outline of the block is included inside the area, and is positioned in the same way as a rectangle. Having defined the block, pushing **f0** brings down the Block menu allowing selection of:

Erase simply erases the area bounded by the block. (cf. Cut on word processors)

Move: the cursor becomes a moveable block. Use the **←→** keys to position the block. **f0** erases the original marked block and moves it to the new position. Keys **f7**, **f8**, **f9** select opaque, transparent or exor. (cf. Cut/Paste on WPs)

Kopy is identical to Move except that the original marked block is not erased – a copy of it is pasted in the new position. (cf Cut/Paste on WPs)

Store enables an area of drawing to be stored so that it can be Glued down again as many times as required anywhere on the drawing. (cf. Paste phrase on WPs).

Glue is for 'pasting down' a previously Stored area of drawing. Keys **f7**, **f8**, **f9** select opaque, transparent or exor. Keys **f4**, **f5**, **f6** allow the whole stored area to be reflected in the y-axis, reflected in the x-axis, and turned negative (white becomes black and black becomes white), respectively.

nb. Stored areas or Moved/Kopied Blocks can only be viewed in situ using Do, although operations can always be Undone, adjusted and Done again.

Write there are four sizes of text that can be typed directly from the keyboard. Tab selects the size, and **Ctrl/Tab** changes the direction of print (forward, down, backward, up). Del deletes the last character. Letters can be positioned to pixel accuracy using the cursor keys. **f0** to fix and exit.

ZOOM allows a part of the drawing to be selected for detailed editing. Use the cursor keys to position the block over the area to be zoomed, then **f0**. Pixels can now be plotted with the **Space-bar** in the ink mode selected by **f1**, **f2**, **f3** as normal. **Tab** changes to half-pixel plotting for very fine editing.

Icon Alpha-Mode: The option key **f4** selects the special alpha-mode for 'Font type' icon sets (see Filing Page). In this mode, typing on the alpha-numeric keyboard will select each appropriate icon (A-Z a-z 0-9.,) and at the same time fix the last icon. The alpha-mode works for all icon sets but only 'makes sense' for icons stored in the standard 'Font type' order. The option keys **f1**, **f2**, **f3** select small, medium or large spacing between the letters; fine position adjustments can be made using the cursor keys as normal. (nb. Full type-setting facilities are not intended). The DEL key will remove the current icon and leave the user in control of the previous one again (but only one DEL can be performed). It is usually best to work in Transparent (**f8**) or Exor (**f9**) modes as the gaps around each letter will partially obliterate the last one if in Solid.

Futher KEY-FUNCTIONS

Esc can always be used to abort an operation.

Ctrl/Copy repeats the last operation.

Ctrl/Return centres the cursor on the screen.

Shift/Return centres the screen on the paper.

Shift/Copy sets the line, rectangle, triangle and block dimensions to zero.

Ctrl/Caps Lock swops the action of the cursor speed key from slow/fast to fast/slow.

THE LAYOUT PAGE

This page is for the initial setting-up of the paper format before starting or loading drawings, and for adjusting the layout of the drawing on the paper before printing and saving.

As on the Design page, the operations available are listed on the right of the screen. The square in the bottom right of the screen represents the nine function keys f1-f9 which control the options for each operations.

The drawing is manipulated using the same Block commands as in the Design page.

New clears the 'paper' of any drawing and allows selection of A4 upright (vertical), A4 sideways (horizontal), or strip format paper. (Note: the paper proportions appear squashed horizontally; this is due to printer pixels not being square). The strip format has been included to allow a very high resolution output – printed at full scale this format covers about one quarter of an upright A4 sheet.

Block: as on the Design page, this operation consists of marking/bounding an area (outline inclusive), using the $\uparrow\leftrightarrow$ keys and the **space-bar** to flip control points, and a second **f0** to bring down the Block menu:

Erase simply erases the area bound by the block. (cf. Cut on WPs).

Move: the cursor become a moveable block. Use the $\uparrow\leftrightarrow$ keys to position the block. **f0** erases the original marked block and moves it to the new position. Keys **f7**, **f8**, **f9** select opaque, transparent or exor (cf. Cut/Paste on WPs)

Kopy is identical to Move except that the original marked block is not erased – a copy of it is pasted in the new position. (cf. Copy/Paste on WPs)

DESIGN allows direct access to the Design page without going via the Main Menu. It also allows selection of the part of the drawing that is to be initially displayed on the Design page. This saves scrolling to get to the required place on the drawing.

THE ICONS EDIT PAGE

As before, the operations available are listed on the right of the screen. The square in the bottom right of the screen represents the nine function keys **f1**–**f9** which control the options for each operation. The bottom of the screen displays one of the sets of icons.

The centre of the screen displays a grid, and pixels may be plotted in the grid to form an icon which is displayed at actual size in the adjacent square.

Pixels are plotted in the normal fashion using the **↑****→** keys and the **Space-bar**. The ink mode is selected by **f1**, **f2**, **f3** as before.

Keep allows the new icon to be stored in one of the 22 spaces available in the icon set. On selecting Keep, the cursor is moved to the icon table and the **↑****→** keys are used to select where the icon will be stored (on pushing **f0** again).

Caution: this can overwrite an existing icon. Keys **f1**, **f2**, **f3** select the icon set as usual. Keeping a large icon in a small space, or a small icon in a big space is not allowed, however the Size may be changed...

Size changes the size of the grid – either 16 × 16 pixels, or 24 × 24 pixels. Changing the size of a large icon to a small icon will lose pixels from the edges.

Edit allows an existing icon to be copied into the grid for editing.

Clear fills the grid white.

Reposition allows the contents of the icon to be 'shuffled' about using the keys. Pixels that 'fall out' are lost. **f0** to exit, or [,] to restore original icon.

The **Enter** key and the **Ctrl** key function as in the design page (Icon-table select, and Cursor speed change, respectively).

FONTS Provided with MICRODESIGN are several sets of icons laid out as complete sets of letters (A-Z a-z 0-9 ,.) which are for use with the Icon Alpha-mode system (see Design Page). When designing fonts, ensure that they are arranged in the same format as those provided, so that each letter-key will produce the appropriate icon.

THE FILING PAGE

The filing page has full file handling and maintenance facilities. Only the required area of drawing is saved in a compressed-data format, so loading and saving is quick and uses minimum disc space.

File names are up to eight alphanumeric characters long.

All icon files are suffixed **.IC**, all drawing files are suffixed **.DR**. The standard 'wild-card' * may be used to represent any character or string in a file name.

Esc may be used to abort any filing operation.

Catalog lists all files on the disc.

Delete lists all files on the disc, and then asks for the name of the file to be deleted. The full file name must be used (including the suffix) then **[Return]**.

Rename lists all files on the disc, and then asks for the OLD name of the file to be renamed **[Return]**, then the NEW name **[Return]**.

Sav123 is used to save all three sets of icons currently loaded, as one file. The file name is automatically suffixed **.IC**. This is used, for example, for saving a user defined icon font. If the file is called **BOOT.IC**, and saved on the **MICRODESIGN** system disc, then **MICRODESIGN** will automatically load this file as its start-up set of icons.

SavIC saves the currently displayed icon set as one file. All the **.IC** files on the disc are listed and a file name is requested. The file name is automatically suffixed **.IC**.

LoadIC lists all the **.IC** files, then allows the **↔** keys to select the particular icon set to load. If the **.IC** file contains a single set of icons, it will be loaded into the set shown in the icon table. If, however, all three icon sets were saved together using **Save123**, then all three sets will be loaded. This applies especially to the Fonts provided (named **F-TIMES.IC**, **F-BRDWAY.IC** etc.) which will load into all three sets for use with the Icon Alpha-mode system (see Design Page).

SavDR displays the whole drawing page and allows the block-cursor to mark/bound the area (outline inclusive) to be saved. Press **f0**. All the **.DR** files on the disc are listed and a file name is requested. The file name is automatically suffixed **.DR**.

LoadDR lists all the **.DR** files, then allows the **↔** keys to select the particular drawing to load. Press **f0**. The appropriate size of block is then displayed on the layout page and the **↔** keys are used to adjust the position of the drawing to be loaded. In this way many smaller drawings may be loaded onto the same 'paper' to form a larger drawing.

Note: Some **.DR** files may only fit onto certain paper formats (use the **New** operation to change format), and **.DR** files created under one format may print slightly squashed or elongated when loaded onto a different format - this is due to the printer pixels not being square (see Circle and Layout Page).

New as on the Layout Page, clears the drawing and allows selection of **A4** vertical, **A4** horizontal, or **Strip** paper format.

THE PRINTING PAGE

Printed output is to an IBM or Epson compatible dot-matrix printer (with quadruple density graphics).

The print options are shown at the bottom of the screen and are selected using the cursor keys only.

The Print Operation is started in the normal way (**f0**, **↓**, **f0** or **'P'**) after having set up all the options.

Printing can be stopped at any stage by pressing (and holding down) the **Esc** key.

Scale: there are three available print sizes for the A4 formats, full size (A4), half size (A6), and quarter size (A8). Strip format provides a higher resolution output, and will not print at quarter size. At full size the strip format covers about one quarter of an A4 sheet. It is possible to concatenate drawings simply by printing them one after another without a form feed in between. In this way four (or more) strip format drawings can be printed to make one full A4 sheet (or more) at high resolution.

Style: there is a trade-off between printing time and printing accuracy. Normal-style printing is fast (four lines at a time) but is less accurate than the one-pin style (one line at a time).

Shade: in dark shade the print-head has two passes at the same line (useful when the ribbon is getting thin!), and in light shade, only one pass.

Margin: used to set the position of the printing on the paper in half and quarter scale prints. (In full scale printing the whole width is used).

Copies: multiple copies can be printed. 'X' will continue printing until aborted by **Esc**.

Paper: printing is interrupted after each A4 sheet if Single is selected, and waits for a key press to continue.

Feed: the printer will form-feed after each copy if this option is On.

APPENDIX ONE

THE KEY FUNCTIONS

CURSOR

- ↑↔↓ cursor position control
- Ctrl cursor speed
- Space-bar toggle control points (shapes and lines)
- Ctrl/Caps Lock speed control toggle
- Ctrl/Return centre cursor on screen
- Shift/Copy zero the dimensions of line, rectangle, triangle, and block

PAPER

- Shift scroll
- Ctrl/Shift scroll speed
- Shift/Return centre the screen on the paper

ICONS

- Enter select icon/icon control:
 - f1, f2, f3 – set1, set2, set3
 - f4, f5, f6 – rotate, mirror, negative
- Ctrl/Esc icon table on/off toggle (if off, table comes on temporarily when Enter is pressed)

MISC

- Space-bar plot point at cursor (when no other operation in progress)
- Esc abort operation
- Ctrl/Copy repeat last operation
- Tab change size of characters during Write
- Ctrl/Tab change direction of characters during Write
- Del delete previous key press during Write
- Ctrl/ cursor to top or bottom of operations menu
- [] undo last f0
- f0 advance/accept/select/fix/exit

OPTIONS

NORMAL	POINT	LINE	ICONS	GLUE
f1 black	black	black	gap s	–
f2 white	white	white	gap m	–
f3 exor	exor	exor	gap l	–
f4 black	thin	solid	alpha	reflect y
f5 white	medium	dotted	–	reflect x
f6 patterned	thick	dotted	–	negative
f7 solid	–	–	solid	solid
f8 transparent	–	–	transparent	transparent
f9 exor	–	–	exor	exor

MOUSE

Movement	cursor position control
Left button	as f0advance/accept/select/fix/exit
Middle button	plot point at cursor OR toggle control point
Right button	as [.] undo last f0
Right then Left	icon control
Right then Middle	option select:
Left button	select option
Middle button	select option then exit
Right button	exit

APPENDIX TWO

I CONVERT

An extended Basic command is supplied allowing any screen to be converted into a MICRODESIGN drawing file.

To install:

RUN "CONVERT"

Syntax:

I CONVERT "filename. DR"

Action:

Takes current contents of the screen and converts it into a disc. DR file which may be then be loaded into MICRODESIGN and edited or printed.

Please note: the I CONVERT command is not relocatable.

APPENDIX THREE

USEFUL HINTS

Eraser: On the Design Page, use the thickest point (**f5**) with white ink (**f2**) to erase irregular areas of the drawing.

Dotted-Lines: Other patterns of dotted-lines can be produced by **Filling** a black line with an appropriate pattern.

Fonts: The 'Font type' icon files provided on the MICRODESIGN disc are labelled F-*****.IC. There is also a drawing file called FONTS .DR, which contains a catalogue of all these 'Font type' icon files; it is intended to be printed for easy reference.

Scaled Drawings: A drawing file is provided called 'SCALE. DR' which contains horizontal and vertical pixel scales (one unit = one pixel). Print this at the required print scale and use the output as a means of measuring dimensions in terms of pixels. This allows accurate scaled drawings to be reproduced using MICRODESIGN.

Remember that the speed key (**Ctrl**) causes the cursor to move in steps of eight pixels, providing an easy way to count many pixels.

THE KEY FUNCTIONS... Movement / left button / Middle button / Right button / Right then Middle

BLOBBY blobby

TIMBIG

BRDBIG

TIMES times

BRDSML brdsml

TIMSML timsml

BRDWAY brdway

TA/ANGLE ʌ/ɔ/ɔ/ɔ/ɔ

circbig

TA/TAL ʌ/ɔ/ɔ/ɔ

CIRCUL circul

TYPBLD typbld

HITEGH HITECH

TYPBIG typbig

INLINE **INLINE**

TYPMED typmed

OCTGNL octgnl

TYPSML typsml

OLDEN oldeng

WOBBLY wobbly

OUTLIN outlin

YXQ

SQUARE square

stripe
