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graphics designer

GRAPHICS DESIGNER

GRAPHICS DESIGNER is available on disk or cassette.
Here's how to load and run the program:

  Tape users: type LOAD <RETURN> then RUN <RETURN>
  Disk users: hold down SHIFT and press RUN/STOP

If you have a joystick plug it into either JOY1 or
JOY2. The title page is displayed until you press a
key or move the joystick. Next decide where in memory
your character set is to be defined. On an unexpanded
C16 there are only 2 choices, but on the Plus 4 there
are 10 (the address of each block is shown in decimal
and hexadecimal). If you are not sure what to do
select A (you can go back to this screen later by
holding down the CTRL key and pressing RUN/STOP).

Now you must decide whether to start by copying the
standard character set from ROM. Even if you are
going to redefine the entire set you'll find it
easier to start with the standard set, so you should
usually press Y. You can download the standard
character set at any time if you type INIT.
Individual characters can be defined by pressing D,
then typing the required character.

THE WORK SCREEN

When you are using GRAPHICS DESIGNER the entire
character set is displayed at the bottom of the screen
for reference. The characters in the current 'window'
are shown on the left hand side. The window can be up
to 10 characters high by 10 characters deep, but it
defaults to a single character - to change the window
size press N, then enter the horizontal and vertical
dimensions (from 1 to 9; enter 0 instead of 10).

In the centre of the screen up to 4 characters from
the window are displayed 'blown up' with each
character dot (or pixel) represented by an entire
character square.

Character 00 is the @ symbol. Note that in the
reference set it is flashing to indicate that this is
the character you are working on. By using the cursor
keys or the joystick you can move around the screen.
If the window is larger than 2 by 2 the part which is
enlarged will change, so that the current character is
always shown. When you reach the edge of the window,
the cursor 'wraps around' to the other side. The X
and Y co-ordinate indicators show where you are within
the window - GRAPHICS DESIGNER normally works in
hexadecimal, but if you prefer to use decimal press N
which toggles between the two.

EDITING THE WINDOW

You can turn the current pixel on by pressing the *
key, or off using the space bar. Use the joystick
button to reverse the current pixel, ie. turn it off
if is on, or on if it is off. To draw using the
cursor keys hold down the shift key (or use the shift
lock); if you hold down the logo (CBM) key instead,
pixels will be turned off rather than on as you move.

If you hold down the CTRL key and move using the
cursor keys pixels will be reversed. You can also
draw in this way using the joystick by holding down
the fire button as you move.

The INST/DEL key works normally and the RETURN key
moves the cursor to the start of the next line. HOME
takes the cursor to the top left of the window and
CLEAR (shift-HOME) clears the window after first
asking for confirmation. A single character can be
cleared by pressing ! (shift-1).

You can move from one character to the other using the
+ and - keys to step forwards and backwards through
the character set. Watch the CHAR indicator (it gives
the screen display code of the current character), and
the ADDR indicator (the address of the first of the 8
bytes in memory representing the character). The last
5 characters of the set are used by the program and
ideally they should not be redefined so the program
does not normally allow these to be accessed using +
or -.

To move directly to a character press G (Goto). Now
type the character (using the shift or CBM key if
necessary). To enter characters in the second half of
the set you must first press CTRL-RVS ON (the second
screen display codes 128 to 255 normally correspond to
reverse-field characters, but GRAPHICS DESIGNER allows
you to work with a full set of 256 characters).

Whenever GRAPHICS DESIGNER is expecting you to type a
character you can, if you prefer, enter the position
of the character in the character set (i.e. its
screen code). First press RETURN, then enter the
position in hex (00-FF), or decimal (0-255), whichever
you have decided to use.

CHANGING COLOURS

When you first run GRAPHICS DESIGNER the screen is
white with a blue border, whilst the characters are
black. On the far right of the screen you'll see
three coloured squares, each with a number just above.
Here's how to change the screen colours:

```
            f1    -    background colour
            f2    -    multicolour 1
            f3    -    multicolour 2
            HELP  -    foreground colour
            X     -    border colour
```

If you hold down the shift key you can cycle through the colours in the opposite direction.

Multicolours 1 and 2 are only of interest in multicolour mode (see below). Note however, that when you press f2 or f3 the first two coloured squares change colour.

To increase the luminance (brightness) of any colour hold down the CTRL key and press the corresponding function key. To decrease the luminance hold down the CBM key while you press the relevant key. Hold down the CTRL key and press FLASH ON to make the current character flash; press again to cancel flashing (flashing cannot be selected in multicolour mode).

Normally when you change the foreground colour all of the characters in the window change colour - this is GLOBAL mode. If you press the @ key the word LOCAL will replace the word GLOBAL - in this mode changing the foreground colour changes only the current character, not the entire window. Press @ a second time to return to GLOBAL mode.

MULTICOLOUR MODE

Normally only two colours, foreground and background, are allowed in any character square. Press M to select multicolour mode, which allows up to four colours - at the cost of lower resolution. In multicolour mode the computer displays dots in horizontal pairs, so that although each character is still the same size, there are effectively only 4 double-width pixels in the horizontal direction.

Experiment by changing the foreground colour - note that colours 8 to 15 are now the same as colours 0 to 7. There is a difference though - when you choose a colour in the range 0 to 7 characters are displayed normally; when the colour is 8 to 15, characters become multicoloured. Because the same data is interpreted in different ways depending on whether or not you are in multicolour mode, your characters may look quite strange in the wrong mode.

Did you notice the arrow which appeared when you first selected multicolour mode? This indicates which of the three 'brushes' is being used - to change brushes press ESC.

Although the foreground colour may be changed from character to character, the background and both multicolours are the same for the entire character set. You can force the foreground colour of every character to be the same as for the current character if you press shift-I.

To exit from multicolour mode back to normal (bit map) mode press B.

ADVANCED EDITING

The commands listed below can be applied to the entire window, or else restricted to the current character by holding down the shift key. Watch the top line of the screen for prompts.

F - FLIP
Press F followed by a cursor key to create a mirror image.

R - REVERSE
This command turns pixels which are on off, and vice versa.

S - SHIFT
Press S followed by a cursor key to shift the window one pixel in the specified direction. Pixels which 'fall off' at the edge reappear at the opposite edge.

T - TURN
This command turns the window 90 degrees in a clockwise direction. When used with a window which is not square, a square section of the window rotates.

E - EXCHANGE
Press E followed by a character to exchange the current character (or window) with the specified character(s). Use this command to move characters around the character set. Press E a second time, followed by the same character, to cancel the exchange.

P - PLACE
Press P followed by a character to place the contents of the window over the specified character(s). The existing definitions of these characters will be lost!

C - COPY
This allows you to combine two characters or windows. The result is placed in the current window; the characters being copied are not changed.

A - ASSOCIATE

When you exchange, copy or place characters, the colour of the characters does not change - unless the ASSOCIATE function is turned on by pressing A. Press A again to disable association of colours.

The next three commands affect the entire window - you cannot restrict them to the current character by holding down the shift key:

CTRL F - FILL

The fill command allows you to fill in part of a window bounded by pixels which are on (or by the boundary). For example, you could fill in a circle or a square.

CTRL R - REMOVE

The opposite of fill, the remove command erases an area. The area need not be solid - it could be an outline, or partially filled. In multicolour mode all colours other than the background are treated as one.

CTRL U - UNFILL

Similar to REMOVE, but in multicolour mode only pixels in the selected colour are removed.

LOADING AND SAVING

GRAPHICS DESIGNER allows you to save all or part of a character screen. Type KEEP then enter D for disk or T for tape; next press D to save the character definitions, or C to save the corresponding foreground colours. Now enter the first character to be saved by typing it on the keyboard, or by pressing RETURN, then entering the character value. Enter the last character to be saved in the same way.

Finally, enter the name of the file, which must be between 1 and 16 characters long. It is a good idea to prefix the name of the file with 'D/' or 'C/' so that you can identify from the file name whether it contains character definitions or colour data.

To load a file that you have previously saved type OLD. Press D or T (disk or tape), then enter the filename.

GRAPHICS DESIGNER automatically detects disk errors (though it leaves the error light flashing); if you are using tape, press RUN/STOP to abort a save or load.

OTHER FEATURES

ANIMATION

The + and - keys can be used to flick quickly through
a series of characters or windows. Press L to change
the limits used by the + and - keys to the first and
last characters which make up the sequence to be
animated. The default limits of $00 and $FA (0 and
250 decimal) can be restored by Pressing shift-L.

MACROS

GRAPHICS DESIGNER allows the recording of a sequence
of up to 255 key presses which can be played back at
the touch of a key - this can save tedious repetition:

```
              CTRL-1   starts recording
              CTRL-2   ends recording
              CTRL-3   plays back
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Beware - an infinite, repetitive sequence can be
created by including the playback command within the
sequence!

MISCELLANEOUS INFORMATION

You can exit from the program by pressing RUN/STOP.
Most commands can be cancelled by pressing the DEL
key.

The colours of the reference character set are stored
in locations $2E00 to $2EFF (11776 to 12031).

To use the characters you have defined you must tell
the computer where they are in memory otherwise
nothing but 'garbage' will appear (and don't forget to
make sure that they are in memory).

To switch in your character set type:

POKE65298,PEEK(65298)AND251:POKE65299,X/256

Where X is the address of your character set (eg.
12288 if you selected option A).

To switch back to the normal character set type:

POKE65298,PEEK(65298)OR4:POKE65299,208

Normally the C16 and Plus 4 can display only 128
characters plus reverse field versions of the same
characters. POKE65287,PEEK(65287)OR128 allows 256
different characters to be used.

To return to normal enter POKE65287,PEEK(65287)AND127.
You can see the effect of this if you display the
entire character set with:

FORI=0TO255:POKE3072+I,I:NEXT

QUICK REFERENCE CHART

*	Draws a dot and moves the cursor right
SPACE	Erases a dot and moves cursor right
shift-INST	Insert blank pixel on current line
DEL	Delete pixel and close up current line
HOME	Move cursor to top left of window
shift-CLEAR	Clear entire window
!	Clear current character
CURSOR keys	Move cursor
shift-CURSOR	Draw line in direction of key
CBM-CURSOR	Erase line in direction of key
CTRL-CURSOR	Reverse pixels in direction of key
W	Define window

The following keys work on the entire window in normal mode, and the current character only in shifted mode:

C	Combine specified work area with current work area
E	Exchange specified work area with current work area
F	Flip current work area in direction of cursor key
P	Place current work area over specified work area
R	Reverse current work area
S	Scroll current work area in direction of cursor key
T	Turn current work area 90 degrees clockwise
D	Define specified work area from ROM
CTRL-F	Fill blank area
CTRL-R	Remove filled area
+/-	Pan through possible work areas in reference set

Other features:

A	Toggle colour association
@	Toggle Global/Local colour change
shift-I	Set character set to current character colour
G	Goto (edit) chosen character
M	Enter Multicolour mode
B	Enter Bit-mapped mode
I-N-I-T	Initialise reference character set
O-L-D	Load character set from tape or disk
K-E-E-P	Save character set on tape or disk
L	Set pan limits for '+' and '-'
shift-L	Set default pan limits
CTRL-1/2/3	Record/End/Playback sequence
f1	Select background colour
f2/f3	Select multicolours
HELP	Select foreground colour
X	Select border colour
ESC	Select multicolour 'brush'
CTRL-colour key	Increase luminance
CBM-colour key	Decrease luminance
CTRL-FLASH ON	Toggle foreground flashing mode