

# ACT SIRIUS1



GRAPHICS TOOLKIT - No.501

CHARACTER GRAPHICS





The SIRIUS 1 computer offers completely 'soft' character sets and keyboard mapping. This means that the type of characters on the screen, and the way the keyboard is structured, will come from the disk when the software is loaded. This feature of the SIRIUS 1 gives greater flexibility than has been offered in the previous generation of micro-computers.

## Character Sets

A character on the SIRIUS 1 screen is composed of a 16-dot by 10-dot matrix. Every character is therefore composed of 160 dots. Some dots are 'on' (a lit dot), others are 'off' (an unlit dot).

The character cell can display much more than just text or number characters — it can also store graphic items such as circles or portions of circles, lines, etc.

The SIRIUS 1 character set's flexibility is demonstrated with an example included with this software. This special character set does not include any text or number characters at all, as other character sets will continue to provide this. Instead, the special graphics character set is made up of:

16 horizontal bars of one dot height. This represents a horizontal bar in every vertical dot in the cell.

10 vertical bars of one dot width. This represents a vertical bar in every horizontal dot in the cell.

12 three-dimensional bar corners. These are a selection of upright, inverted and horizontal bar corners. Each corner is one dot in width, and fits the entire cell, corner to corner.

37 diagonal lines that run from the bottom left hand corner to the top right of the cell. The lines are of varying length and slope and are capable of drawing accurate angled lines, as well as being able to make approximate circular images. The lines are all of one dot width.

20 lines that run from the bottom right hand corner to the top left of the cell. The lines are of varying length and slope.

31 arcs/circles that allow the creation of six circles which (although the system may be in low-resolution mode) give the appearance of high-resolution images.

An example of the special high-resolution character set in use is shown to the right.

These character sets are provided for use with programs such as PMATE-86 (Programmers Editor) and by user or application programs. (BASIC can access them all via the PRINT statement.) You can even define your own text or graphics character set with EFONT.

## KEYGEN

The SIRIUS keyboard is as soft as the character set itself. Each key generates a unique code which can be mapped to a character from the character set. The character seen on the screen does not need to be the one engraved on the key. Typing the letter 'W' would conceivably generate a graphic character, such as an arc.

The keyboard may be re-mapped using the KEYGEN program. All the keys, or just one key, can be changed — it's entirely up to the software designer. The 'ALT' key and the 'SHIFT' key may be used to allow the generation of three different characters from each key. This gives the user many different key values to choose from.

## EFONT

The character set defines the shapes of the symbols displayed on the screen. The Font Editor is used to edit a character set table. Each character is formed on the screen by either a 10 x 16 or a 16 x 16 matrix of pixels. A character set consists of the collection of shapes for each of the possible 128 or 256 character codes.

The Font Editor can edit a character set by taking one or more existing character sets and combining and re-arranging them.

The Font Editor can also be used to create original shapes by 'drawing' the matrix of pixels for a character code. This is useful if a special font (such as script or Gothic) is required. It is also helpful when creating special shapes used by an application. (For example KEYGEN uses special shapes to draw a picture of a keyboard). These shapes greatly enhance the user interface.

## MODCON

MODCON allows the dynamic saving and restoring of keyboard files and character sets.

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