3.2.3 Character Editor

CEDIT is composed of four subsystems. FES is the Font Editor Subsystem, IES is the Image Editor Subsystem, AES is the Animation Editor Subsystem, and ADS is the Animation Display Subsystem. The structure of the Character Editor is shown in the CEDIT Program Block Diagram, Figure 3.2.3.

3.2.3.1 CEDIT Main Menu

The Character Editor Main Menu shall be displayed (see Figure 3.2.3.1). The Main Menu shall list the following functions:

CREATE/EDIT A FONT
CREATE/EDIT AN IMAGE
CREATE/EDIT AN ANIMATION
DISPLAY AN ANIMATION
DISPLAY DATA DIRECTORY
RETURN TO SYSTEM MENU

The user may select a function. See Section 3.2.0.4.1 for an explanation of how the user makes a function menu selection.

If the user presses the ESC key, then the SWEAT System Menu HELP Screen shall be displayed (see Section 3.2.0.3).

3.2.3.1.1 Create/Edit a Font

The function shall enter the Font Editor Subsystem (FES) of CEDIT (see Section 3.2.3.2). Return from this function shall be to the CEDIT Main Menu.

3.2.3.1.2 Create/Edit an Image

This function shall enter the Image Editor Subsystem (IES) of CEDIT (see Section 3.2.3.3). Return from this function shall be to the CEDIT Main Menu.

3.2.3.1.3 Create/Edit an Animation

This function shall enter the Animation Editor Subsystem (AES) of CEDIT (see Section 3.2.3.4). Return from this function shall be to the CEDIT Main Menu.

3.2.3.1.4 Display an Animation

This function shall enter the Animation Display Subsystem (ADS) of CEDIT (see Section 3.2.3.5). Return from this function shall be to the CEDIT Main Menu.

3.2.3.1.5 Display Data Directory

This function shall enter the Data Directory function of SWEAT (see Section 3.2.0.2). Return from this function shall be to the CEDIT Main Menu.

3.2.3.1.6 Return to System Menu

This function shall exit CEDIT and return to the SWEAT System Menu Screen (see Section 3.2.0.1).

3.2.3.2 FES - Font Editor Subsystem

The Font Editor Screen shall be displayed on entry (see Section 3.2.3.2.1).

The FES shall be completely command driven. Each command shall be invoked by a single keystroke.

3.2.3.2.1 FES Displays

The generic display (the display used for all graphics modes) is shown in Figure 3.2.3.2.1.

The top line of the display shall indicate the Graphics Mode in effect. If no mode is yet in effect, the top line shall read:

```
MODE none          FONT EDITOR
```

If a Graphics Mode is in effect, the top line shall contain one of the following:

```
MODE 2 (B0)        FONT EDITOR
MODE 3             FONT EDITOR
MODE 4             FONT EDITOR
MODE 5             FONT EDITOR
MODE 6 (B1)        FONT EDITOR
MODE 7 (B2)        FONT EDITOR
```

where Mode is the ANTIC mode in effect and "(Bx)" indicates the corresponding BASIC graphics mode, if any.

The second line of the display shall contain the name(s) of the current "N" file (the file being edited) and "O" file (the optional source of character bit maps).

The third line of the display shall contain the ATASCII and Key Code values (in hexadecimal and decimal) of the character being edited and the size of the font in characters, displayed as follows:

```
A $hh ddd     kc $hh ddd     ccc CHARS
```

where "A" shall be the ATASCII character corresponding to the character being edited, "kc" designates the Key Code values, "hh" are hexadecimal digits, "ddd" are decimal digits, and "ccc" is a decimal count.

The fourth line of the display shall display the command name on the left half and the command prompt or error message on the right half of the line.

The display uses an 8 row by 8 column large pixel map in the middle of the screen for editing a font in Antic Modes 2, 3, 6, and 7.

The display uses an 8 row by 4 column large pixel map in the middle of the screen for editing a font in Antic Modes 4 and 5.

Figure 3.2.3.2!

The Adjacent Characters display shall appear in the lower left corner of the screen. This display shall consist of a three by three matrix of characters. The character being edited shall be in the center position. The user may select characters in the remaining 8 (adjacent) positions with the "A" command.

The display of the strike of the font (a strike is a display of all characters in the font) shall be done in the Antic Mode of the font.

3.2.3.2.2 User Interaction

The FES shall be in command mode when initially entered and any character typed shall be treated as a command character. The FES shall accept a command character type-in and shall display the name of the command on the first half of the fourth line of the display. It shall prompt the user for what it expects next on the second half of line four.

A cursor shall be available that can be positioned on the large editing pixel map or on the Adjacent Characters display or on the strike of the font.

The user moves the cursor over the large editing pixel map (or the Adjacent Display or the strike of the font) by manipulating the joystick or using the cursor control keys on the keyboard. The action of placing the cursor on a pixel, row, column, etc. is called "choosing" the item. The user "selects" the chosen item by pressing the joystick trigger or the RETURN key when the cursor is on the desired item. This action is also called "selecting with the trigger" in the detailed command descriptions that follow. The user may also type in values as required by the particular command. Details of the interaction needed for each command are given in the sections describing the commands. When the command is complete, the user shall be prompted to enter the next command. Note that some commands remain in effect until another command is invoked.

As the user moves the cursor, the cursor shape shall change to outline or otherwise indicate the type of item that will be selected (single pixel, row of pixels, column of pixels, etc.) when the trigger button is pressed. A pixel, row of pixels, column of pixels, Adjacent Character Display position, or character in a strike shall be outlined by the cursor. The boundary (space) between two pixels, two rows of pixels, or two columns of pixels shall be indicated by a bar-shaped cursor with inward pointing arrows on each end (i.e. >--------<).

At any time prior to completion of the selections for a single command, the command shall be canceled by a new command type-in. The BREAK key shall cancel any command prior to completion of the selections or type-ins for that command and must be used for that purpose when the command is expecting a type-in.

3.2.3.2.3 Command List

The FES shall recognize the following command letters:

0	set pixels, rows, columns to "0" or "00" binary
1	set pixels, rows, columns to "1" or "01" binary
2	set pixels, rows, columns to "10" binary
3	set pixels, rows, columns to "11" binary
A	set Adjacent characters display
C	Copy pixels, rows, columns
D	Delete pixels, rows, columns
E	Edit character from "N" file (initializes editing pixels map from "N" font file)
F	edit character From "0" file (initializes editing pixels map from "0" font file)
G	set Graphics mode
H	set Hue
I	Insert pixel, row, column
K	Kill--quit but don't write font file (requires verification)
L	set Luminance
M	Move pixels, rows, columns
N	New font file name
O	Optional font file name
P	Print pixel maps P C = print Current character pixel map P S = print Strike of the font (all characters)
Q	Quit and write font file ("N" file) (requires verification)
S	display Strike of font (all characters)
T	Toggle or cycle values for pixels, rows, columns
U	Undo last command (some exceptions)
W	Write font file ("N" file) (requires verification)
X	eXchange two pixels, rows, columns
Z	Zap editing pixel map
/	reflect character on / diagonal
\	reflect character on \ diagonal
-	reflect rows on - axis (top to bottom reflect)
|	reflect columns on | axis (left to right reflect)
<	rotate 90 degrees counterclockwise (top goes <)
>	rotate 90 degrees clockwise (top goes >)
ATARI	toggle or cycle pixels (ATARI Key)
=	save editing pixel map
*	remember current cursor position
.	return cursor to remembered position
ESC	show help display
BRK	resets any command awaiting a selection

Not all commands are valid for all graphics modes. The detailed descriptions of the commands define the graphics modes for which each command is valid.

3.2.3.2.4 Graphics Modes

The graphic modes supported by CEDIT shall be:

Antic Mode 2 (Basic Mode 0)
Antic Mode 3
Antic Mode 4
Antic Mode 5
Antic Mode 6 (Basic Mode 1)
Antic Mode 7 (Basic Mode 2)

All commands shall set a default Graphics Mode when invoked (if the Graphics Mode has not yet been set) except:

G	(mode set by user as part of command)
K	(ends session without saving editing)
N	(mode determined by "N" file mode)
O	(mode determined by "O" file mode)
U	(undoes previous editing command)
*	(remembers cursor position)
.	(restores cursor to remembered position)
ESC	(requests HELP screen)
BREAK	(stops in-process editing command)

The "2" and "3" commands shall set a default Graphics Mode of Antic Mode 4. All other commands shall set a default Graphics Mode of Antic Mode 2 (Basic Mode 0).

3.2.3.2.5 Specifying Characters

Several commands require specifying a character to display or manipulate. When a character specification is expected, the normal command characters shall not be recognized. Characters may be specified in any of four ways.

1. The user may type the hexadecimal character code for the character as "$hh" where the h's are hexadecimal digits.

2. The user may type the decimal character code for the character as "ddd" where the d's are decimal digits.

3. The user may type the keystroke for the character as "Kx" where the "K" indicates a keystroke selection and where "x" is the keystroke desired. The ATASCII code corresponding to the keystroke shall be used for the character code.

4. The user may type "S" to display a strike of the font being edited if it is not already displayed. Then the user moves the cursor to the character desired in the strike of the font. Pressing the trigger button or the RETURN key selects the caracter.

The ATASCII code for the selected character shall be used for the character code (the index of the character in the font).

3.2.3.2.6 Selecting Color Registers and Colors

When a color register must be selected for a command, the command prompt shall be:

select color reg

The user may choose a pixel in the large editing map and select it with the trigger. The color register that corresponds to that pixel will be selected as the color register whose color is to be modified. The user may optionally type the pixel value or the color register designator as follows:

"0" selects the color register for the 0-valued pixels
PF2 register for modes 2 and 3
BAK register for modes 4, 5, 6, and 7

"1" selects the color register for the 1-valued pixels
PF1 register for modes 2 and 3
PF0 register for modes 4, 5, 6, and 7

"2" selects the color register for the 2-valued pixels
PF1 register for modes 4 and 5

"3" selects the color register for the 3-valued pixels PF2 register for modes 4 and 5

"B" selects the background color register in all modes

"R0" selects the PF0 register in modes 4, 5, 6, and 7

"R1" selects the PF1 register in all modes

"R2" selects the PF2 register in all modes

"R3" selects the PF3 register in modes 4, 5, 6, and 7

Any selection and mode combination not given above shall display (on the right half of line 4) the error message:

not valid for mode

if the color register is one of the legal designators, or shall display the error message:

unknown reg

for any other entry.

Setting of the color shall be via a pair of paddles plugged into joystick port 2 or via the "<" and ">" keys. The hexadecimal value of the color register shall be displayed in the command prompt area of line 4 of the display.

3.2.3.2.7 "0" Command - Set Pixels to 0

The "0" command shall be valid for all graphics modes.

The "0" command shall display

set P R C to 0

for the command name and shall display

select P R C

for the command prompt.

The user chooses a pixel, row, or column with the cursor. Selecting the chosen item with the trigger shall set the pixel, row of pixels, or column of pixels to the value "0" binary in modes 2 (B0), 3, 6 (B1), and 7 (B2), or to the value "00" binary in modes 4 and 5.

This command shall remain in effect until the user types another command letter.

3.2.3.2.8 "1" Command - Set Pixels to 1

The "1" command shall be valid for all graphics modes.

The "1" command shall display

set P R C to 1

for the command name and shall display

select P R C

for the command prompt.

The user chooses a pixel, row, or column with the cursor. Selecting the chosen item with the trigger shall set the pixel, row of pixels, or column of pixels to the value "1" binary in modes 2 (B0), 3, 6 (B1), and 7 (B2), or to the value "01" binary in modes 4 and 5.

This command shall remain in effect until the user types another command letter.

3.2.3.2.9 "2" Command - Set Pixels to 2

The "2" command shall be valid for graphics modes 4 and 5. Attempted use of the "2" command in other graphics modes shall display the error message.

not valid for mode

The "2" command shall display

set P R C to 2

for the command name and shall display.

select P R C

for the command prompt.

The user chooses a pixel, row, or column with the cursor. Selecting the chosen item with the trigger shall set the pixel, row of pixels, or column of pixels to the value "10" binary.

This command shall remain in effect until the user types another command letter.

3.2.3.2.10 "3" Command - Set Pixels to 3

The "3" command shall be valid for graphics modes 4 and 5. Attempted use of the "3" command in other graphics modes shall display the error message.

not valid for mode

The "3" command shall display

set P R C to 3

for the command name and shall display

select P R C

for the command prompt.

The user chooses a pixel, row, or column with the cursor. Selecting the chosen item with the trigger shall set the pixel, row of pixels, or column of pixels to the value "11" binary.

This command shall remain in effect until the user types another command letter.

3.2.3.2.11 "A" Command - Adjacent Characters Display

The "A" command shall be valid for all graphics modes.

The "A" command shall display

Adjacent display

for the command name and shall display

select position

for the first command prompt.

The user chooses one of 8 positions in the Adjacent Display (in the lower left corner of the screen) with the cursor and selects it with the trigger. The command prompt shall change to

select character

The user selects a character using any method from Section 3.2.3.2.5. That character shall be displayed in the selected position of the Adjacent Display. The command prompt shall change back to

select position

This command shall remain in effect until the user types another command letter.

Note: this command is used to examine how various characters look or fit next to each other and is especially useful when a multi-character graphics object is being designed.

3.2.3.2.12 "C" Command - Copy

The "C" command shall be valid for all graphics modes.

The "C" command shall display

Copy P R C

for the command name and shall display

select source P R C

for the first command prompt.

The user chooses a pixel, row, or column with the cursor. Selecting the chosen item with the trigger shall select the pixel, row of pixels, or column of pixels as the source for the copy. The command prompt changes to

select ~~source~~ dest P

if a pixel is the source, or to

select dest R

if a row is the source in modes 4 or 5 or to

select dest C

if a column is the source in modes 4 or 5 or to

select dest R C

if either a row or column is the source in modes 2 (B0), 3, 6 (B1), or 7 (B2).

The user chooses the appropriate destination pixel, row, or column, or the desired boundary (space) between two pixels, rows, or columns with the cursor. Selecting the chosen item with the trigger shall replace or insert the source selection at the destination location. The command prompt shall change back to

select source P R C

Copy shall replace the contents of the destination pixel, row, or column if a pixel, row, or column was selected as the destination. Copy shall insert the source pixel, row, or column if the destination was selected as the space between two pixels, rows, or columns.

Insertion of a pixel on a column (by choosing the destination to be between two pixels in the same column) shall cause all pixels below the insertion point to move down one position with the pixel on the bottom row being lost.

Insertion of a pixel on a row shall cause all pixels to the right of the insertion point on the row to move right one position with the final pixel on the row being lost.

Insertion of a column of pixels shall cause all columns to the right of the insertion point to move right one position with the final column being lost.

Insertion of a row of pixels shall cause all rows below the insertion point to move down one position with the bottom row being lost.

This command shall remain in effect until the user types another command letter.

3.2.3.2.13 "D" Command - Delete

The "D" command shall be valid for all graphics modes.

The "D" command shall display

Delete P R C

for the command name and shall display

select P R C

for the command prompt.

The user chooses a pixel, row, or column with the cursor. Selecting the chosen item with the trigger shall delete the pixel, row of pixels, or column of pixels selected.

Deletion of a pixel shall cause pixels to the right of the deleted pixel in the same row to move left one position and a zero pixel to be appended on the right to fill out the row.

Deletion of a column of pixels shall cause columns to the right of the deleted column to move left one position and a column of zero pixels to be appended on the right to fill out the pixel map.

Deletion of a row of pixels shall cause rows below the deleted row to move up one position and a row of zero pixels to be appended to the bottom to fill out the pixel map.

This command shall remain in effect until the user types another command letter.

3.2.3.2.14 "E" Command - Edit Character From "N" File

The "E" command shall be valid for all graphics modes.

The "E" command shall display

Edit N file char

for the command name and shall display

select character

for the command prompt.

The user selects a character using any method from Section 3.2.3.2.5. That character shall be used to initialize the large editing pixel map.

This command shall terminate upon selection of a character.

3.2.3.2.15 "F" Command - Edit Character From "O" File

The "F" command shall be valid for all graphics modes.

The "F" command shall be valid only if an "O" file has been loaded. If this command is invoked before an "O" file has been loaded the error message

no O file loaded

shall be displayed.

The "F" command shall display

char From O file

for the command name and shall display

select character

for the command prompt.

The user selects a character using any method from Section 3.2.3.2.5. That character shall be used to initialize the large editing pixel map.

This command shall terminate upon selection of a character.

Note: this command allows characters to be moved from the "O" (optional) font file into the "N" (new) font file and provides a convenient way to copy or include a few characters from one font file in another.

3.2.3.2.16 "G" Command - Set Graphics Mode

The "G" command shall be valid for all graphics modes.

The "G" command shall allow only graphics mode changes that are compatible with the current graphics mode. Two modes are compatible when they have the same number of pixels in a row. For example, Modes 4 and 5 are compatible because they have four 2-bit pixels per row. They are not compatible with any other mode because all other modes have eight 1-bit pixels per row. If no graphics mode is in effect the graphics mode may be set by typing:

"2" or "B0" for Antic Mode 2
"3" for Antic Mode 3
"4" for Antic Mode 4
"5" for Antic Mode 5
"6" or "B1" for Antic Mode 6
"7" or "B2" for Antic Mode 7

If the current graphics mode is 4 or 5, the graphics mode may be "changed" by typing:

"4" for Antic Mode 4
"5" for Antic Mode 5

Any other attempted changes shall cause the error message

illegal mode

to be displayed.

If the current graphics mode is 2, 3, 6, or 7, the graphics mode may be "changed" by typing:

"2" or "B0" for Antic Mode 2
"3" for Antic Mode 3
"6" or "B1" for Antic Mode 6
"7" or "B2" for Antic Mode 7

Any other attempted change shall cause the error message

illegal mode

to be displayed.

The "G" command shall display

set Graphics mode

for the command name and shall display

enter mode

for the command prompt.

This command shall terminate upon entry of a legal graphics mode.

3.2.3.2.17 "H" Command - Set Hue

The "H" command shall be valid for all graphics modes.

The "H" command shall display

  set Hue

for the command name and shall display

  select color reg

for the first command prompt.

The user selects a color register by any method described in Section 3.2.3.2.6. When a color register is successfully selected, the program shall display:

  set hue

as the second command prompt.

The user sets the hue by any method described in Section 3.2.3.2.6.

This command shall terminate upon successful setting of the hue. Push return

3.2.3.2.18 "I" Command - Insert

The "I" command shall be valid for all graphics modes.

The "I" command shall display

  Insert P R C

for the command name and shall display

  sel between P R C

for the command prompt.

The user chooses the space between two pixels, two rows, or two columns with the cursor. Selecting the chosen location with the trigger shall cause a zero value pixel, row of pixels, or column of pixels to be inserted at that location.

Insertion of a pixel on a column (by choosing the destination to be between two pixels in the same column) shall cause all pixels below the insertion point to move down one position with the pixel on the bottom row being lost.

Insertion of a pixel on a row shall cause all pixels to the right of the insertion point on the row to move right one position with the final pixel on the row being lost.

Insertion of a column of pixels shall cause all columns to the right of the insertion point to move right one position with the final column being lost.

Insertion of a row of pixels shall cause all rows below the insertion point to move down one position with the bottom row being lost.

This command shall remain in effect until the user types another command letter.

Note: this command inserts "0" or "00" binary valued pixels into the character being edited while the "C" (copy) command inserts a copy of data from elsewhere in the character bit map.

3.2.3.2.19 "K" Command - Kill Editing Session

The "K" command shall be valid for all graphics modes.

The "K" command shall display

Kill session

for the command name and shall display

verify kill

for the command prompt. The warning message

THE EDITING COMPLETED WILL BE LOST

shall replace the third line of the screen.

The user may type "Y" or "y" to verify that the session is to be killed. Verification shall cause FES to return to the CEDIT Main Menu Screen (see Section 3.2.3.1).

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Any keystroke except "Y" or "y" shall cause the kill command to be ignored and the prompt

enter command

to be displayed. The third line shall be reset to its previous contents.

3.2.3.2.20 "L" Command - Set Luminance

The "L" command shall be valid for all graphics modes.

The "L" command shall display

set Luminance

for the command name and shall display

select color reg

for the first command prompt.

The user selects a color register by any method described in Section 3.2.3.2.6. When a color register is successfully selected, the program shall display.

set luminance

as the second command prompt.

The user sets the luminance by any method described in Section 3.2.3.2.6.

The command shall terminate upon successful setting of the luminance.

3.2.3.2.21 "M" Command - Move

The "M" command shall be valid for all graphics modes.

The "M" command shall display.

Move P R C

for the command name and shall display

select source P R C

for the first command prompt.

The user chooses a pixel, row, or column with the cursor. Selecting the chosen item with the trigger shall select the pixel, row of pixels, or column of pixels as the source of the move. The command prompt changes to

select dest P

if a pixel is the source, or to

select dest R

if a row is the source in modes 4 or 5, or to

select dest C

if a column is the source in modes 4 or 5 or to

sel dest R C

if either a row or column is the source in modes 2 (B0), 3, 6 (B1), or 7 (B2).

The user chooses the appropriate destination pixel, row, or column, or the desired boundary between two pixels, rows, or columns with the cursor. Selecting the chosen item with the trigger shall delete the source selection from its original location and shall insert the source selection at its destination location. The command prompt shall change back to

select source P R C

Movement of a pixel shall be performed within a column if the source and destination locations are in the same column. Movement of a pixel shall be performed within a row if the source and destination locations are in the same row. Otherwise the source pixel shall be deleted from its source row and inserted into its destination row or column. Movement within a column or row shall cause all pixels between the source and destination locations to be shifted toward the source location.

Movement of a column to a column destination shall cause all columns between the source and destination columns to shift toward the source column. Movement of a row to a row destination shall cause all rows between the source and destination rows to be shifted toward the source row. Otherwise the source row or column shall be deleted and inserted as the destination column or row.

Deletion of pixels, rows, or columns shall be as described for the "D" command, Section 3.2.3.2.13. Insertion of pixels, rows, or columns shall be as described for the "I" command, Section 3.2.3.2.18.

This command shall remain in effect until the user types another command letter.

Note: this command can be used to "roll" the character bit map left or right by moving the column on one edge to the other edge; it will similarly "roll" the character bit map up or down.

3.2.3.2.22 "N" Command - New Font File

The "N" command shall be valid for all graphics modes.

The "N" command shall display

New font file name

for the command name and shall display

type file name

for the command prompt.

If no "N" file name is ~~in effect~~ defined when the "N" command is invoked, the name entered by the user shall be treated as a file to be loaded. If the file exists, it shall be loaded if it matches the current graphics mode or if no graphics mode is in effect, and its graphics mode shall become the graphics mode for subsequent editing. If it does not match the graphics mode, the error message

mismatched modes

shall be displayed and the file not loaded. If the file does not exist, the file name shall be saved for subsequent use in writing out the font being edited.

If an "N" file name is in effect when the "N" command is invoked, the new file name shall be saved for subsequent use in writing out the font being edited.

This command shall terminate upon entry of the file name or the file's successful loading.

Note: The "N" command specifies the file to be edited or the file on which to save the editing.

3.2.3.2.23 "O" Command - Optional Font File Name

The "O" command shall be valid for all graphics modes.

The "O" command shall display

Optional font file

for the command name and shall display

type file name

for the command prompt.

If the optional font file exists, it shall be loaded as the optional font if it matches the current graphics mode. If no graphics mode is in effect, the graphics mode shall be set to the graphics mode of the optional font file. If it does not match the current graphics mode, the user shall be prompted with

wrong mode, verify

The responses "Y" or "y" shall cause the file to be loaded despite the mode mismatch. Any other response shall terminate the command.

If the optional font file does not exist, the error message

no such file

shall be displayed, and the command shall terminate.

The command shall terminate upon successful loading of the optional font file if not terminated as described above.

Note: the "O" file can only be a source of character bit maps. No character in the "O" file can be changed and stored back in the "O" file!

3.2.3.2.24 "P" Command - Print Pixel Maps

The "P" command shall be valid for all graphics modes.

The "P" command shall display

Print pixel maps

for the command name and shall display

Char or Strike?

for the command prompt.

If the user types "C" or "c", the content of the large pixel editing map shall be printed. If the user types "S" or "s", the pixel maps for every character in the font (called a strike of the font) shall be printed. Any other keystroke shall terminate the command.

Each page of a printout shall be headed with the graphics mode and "N" font file name as:

Mode n File D2:fontfile.fnt

Strike printouts shall contain four characters side by side in each row and shall contian four rows of characters per 66 line page.

The printout of each character shall include the ATASCII character, the ATASCII code in hexadecimal and decimal, and the keystroke code in hexadecimal and decimal (as displayed on line 3 of the display) as a header for the pixel map.

The pixel map printed for modes 2 (B0), 3, 6 (B1), and 7 (B2) shall use "*" for "1" pixels and " " (spaces) for "0" pixels. These pixel maps shall be printed as:

```
H  $48  72
kc $79 121

 ________
|**   **|
|**   **|
|**   **|
|*******|
|**   **|
|**   **|
|**   **|
|       |
 --------
```

The pixels map printed for modes 4 and 5 shall use "0." for "00" pixels, "1." for "01" pixels, "2." for "10" pixels, and "3." for 11 pixels. These pixels maps shall be printed as:

```
H  $48  72
kc $79 121

 _______
|3.0.1.2|
|3.0.1.2|
|3.0.1.2|
|3.3.3.2|
|3.0.1.2|
|3.0.1.2|
|3.0.1.2|
|0.0.0.0|
 -------
```

3.2.3.2.25 "Q" Command - Quit

The "Q" command shall be valid for all graphics modes.

The "Q" command shall display

```
Quit
```

for the command name and shall display

verify quit

for the command prompt.

The responses "Y" or "y" shall cause the font to be saved on the "N" font file. Any other keystroke shall terminate the command without quitting. If no "N" font file has been specified, the prompt shall change to

type file name

The font shall be saved on the file name specified.

After the font has been saved, the FES shall return to the CEDIT Main Menu (see Section 3.2.3.1).

3.2.3.2.26 "S" Command - Strike of Font

The "S" command shall be valid for all graphics modes.

The "S" command shall display

Strike of font

for the command name. There is no prompt.

A strike (all characters) of the font shall be displayed at the bottom of the screen in the graphics mode of the font.

3.2.3.2.27 "T" Command - Toggle Or Cycle Pixels

The "T" command shall be valid for all graphics modes.

The "T" command shall display

Toggle P R C

for the command name and shall display

select P R C

for the command prompt.

The user chooses a pixel, row, or column with the cursor. Selecting the chosen item with the trigger shall cause that pixel, all pixels in that row, or all pixels in that column to be toggled or cycled. Mode 2 (B0), 3, 6 (B1), or 7 (B2) pixels shall be toggled from "0" to "1" or from "1" to "0" depending on their initial value. Mode 4 or 5 pixels shall be cycled from "00" to "01", "01" to "10", "10" to "11", or from "11" to "00" depending on their initial value.

This command shall remain in effect until the user types another command letter.

Note: the "T" command and the ATARI Key perform the same operation. The "T" command only works on the selected pixel, row of pixels, or column of pixels. The ATARI Key works on the whole character bit map. Each press of the trigger shall cause one toggle or value change.

3.2.3.2.28 "U" Command - Undo

The "U" command shall be valid for all graphics modes.

The "U" command shall display

Undo

for the command name. There is no prompt.

The "U" command shall "undo" the last pixel editing function performed by restoring the large pixel editing map to its content before the previous editing function.

The "U" command shall not "undo" any non-editing command.

3.2.3.2.29 "W" Command - Write "N" File

The "W" command shall be valid for all graphics modes.

The "W" command shall display

Write N file

for the command name and shall display

verify write

for the command prompt.

The responses "Y" or "y" shall cause the font to be saved on the "N" font file. Any other keystroke shall terminate the command without writing. If no "N" font file has been specified, the prompt shall change to

type file name

The font shall be saved on the file name specified. The BREAK key shall cancel this command without writing at any time prior to pressing RETURN at the end of the file name.

After the font has been saved, the command shall terminate.

The default drive for the font file shall be drive 2 (D2:). The default extension for font files shall be .FNT.

3.2.3.2.30 "X" Command - Exchange

The "X" Command shall be valid for all graphics modes.

The "X" command shall be display

eXchange P R C

for the command name and shall display

select 1st P R C

for the first command prompt.

The user chooses a pixel, row, or column with the cursor. Selecting the chosen item with the trigger shall select the pixel, row of pixels, or column of pixels as the first of two items to be exchanged. The command prompt changes to

select 2nd P

if a pixel was selected as the 1st item or to

select 2nd R

if a row was selected as the 1st item in modes 4 or 5 or to

select 2nd C

if a column was selected as the 1st item in modes 4 or 5 or to

select 2nd R C

if either a row or column was selected as the 1st item in modes 2 (B0), 3, 6 (B1), or 7 (B2).

The user chooses the appropriate pixel, row, or column with the cursor. Selecting that item with the trigger shall cause the two items to be exchanged. The command prompt changes back to

select 1st P R C

When a row and a column are exchanged, the pixel at the top of the column shall be placed at the left edge of the row and the pixel at the left edge of the row shall be placed at the top of the column. The order of exchange shall be to place the 2nd item into the 1st and then to place the 1st item into the 2nd. Hence the pixel at the row/column intersection shall be from the 1st item selected.

The command shall remain in effect until the user types another command letter.

Note: this command is most useful for exchanging rows or columns of pixels.

3.2.3.2.31 "Z" Command - Zap Pixel Map

The "Z" command shall be valid for all graphics modes.

The "Z" command shall display

Zap pixel map

for the command name and shall display

type zapping value

for the command prompt.

The user types the value used to preset the pixel map. "0" shall set all pixels in the large editing pixel map to "0" binary in modes 2 (B0), 3, 6 (B1), or 7 (B2) and to "00" binary in modes 4 or 5. "1" shall set all pixels to "1" binary in modes 2, 3, 6, or 7 and to "01" binary in modes 4 or 5. "2" shall set all pixels to "10" binary in modes 4 or 5. "3" shall set all pixels to "11" binary in modes 4 or 5. "2" or "3" values in modes 2, 3, 6, or 7 shall display the error message.

```
illegal for mode
```

Any other response shall terminate the command without zapping the pixel map. The command shall terminate when the pixel map is set to the specified value.

3.2.3.2.32 "/" Command - Reflect On / Diagonal

The "/" command shall be valid in modes 2 (B0), 3, 6 (B1), and 7 (B2).

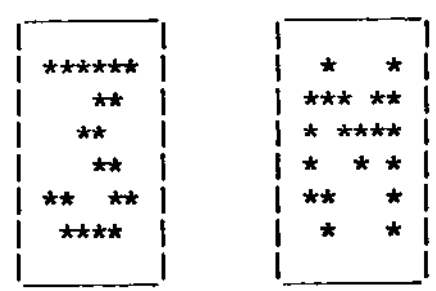
The "/" command shall display

```
reflect on /
```

for the command name. There is no command prompt.

The large editing pixel map shall be reflected on the "/" diagonal. The command shall terminate upon completion of the reflection.

For example, reflection on the "/" diagonal for the character "3" is shown below.



3.2.3.2.33 " "Command - Relect On Diagonal

The " " command shall be valid in modes 2 (B0), 3, 6 (B1), and 7 (B2).

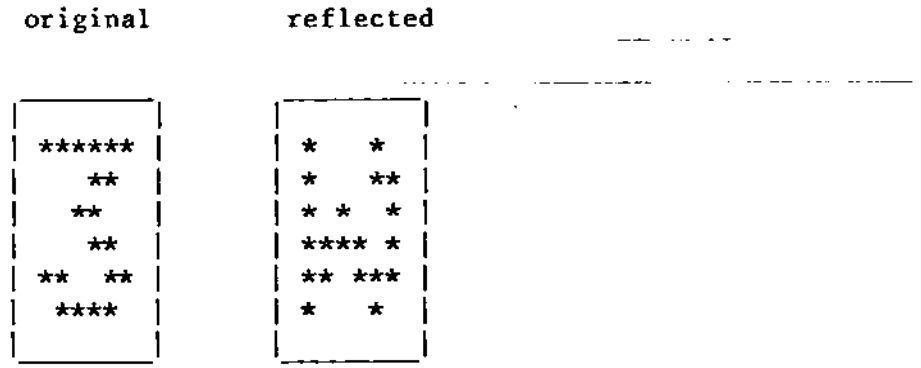
The " " command shall display

reflect on

for the command name. There is no command prompt.

The large editing pixel map shall be reflected on the " " diagonal. The command shall terminate upon completion of the reflection.

For example, reflection on the " " diagonal for the character "3" is shown below.



3.2.3.2.34 "-" Command - Reflect On Horizonal Axis

The "-" command shall be valid for all graphics modes.

The "-" command shall display

reflect on -

for the command name and shall display

select 1st R

for the first command prompt.

The user chooses a row with the cursor. Selecting that row with the trigger shall cause that row to be the 1st boundary row of the area to be reflected. The command prompt shall change to

select 2nd R

The user chooses a row with the cursor. Selecting that row with the trigger shall cause that row to be the 2nd boundary row of the area to be reflected. The command prompt shall change to

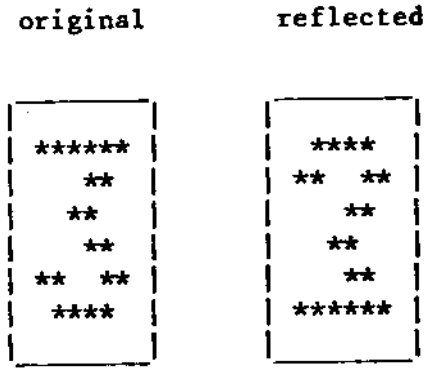
select R axis

The user chooses a row between the boundary rows or a position between two rows within the boundary rows with the cursor. Selecting the chosen axis with the trigger shall cause the rows for the 1st boundary to the 2nd boundary inclusive to be reflected about the selected axis.

Rows reflected outside the pixel map shall be lost. Rows outside the boundary rows shall be replaced if the reflection axis is not centered between the boundary rows.

The command shall remain in effect until the user types another command letter.

For example, reflection on the center "-" axis for the whole character "3" is shown below.



3.2.3.2.35 "|" Command - Reflect on Vertical Axis

The "|" command shall be valid for all graphics modes.

The "|" command shall display

```
reflect on |
```

for the command name and shall display

```
select 1st C
```

for the first command prompt.

The user chooses a column with the cursor. Selecting that column with the trigger shall cause that column to be the 1st boundary column of the area to be reflected. The command prompt shall change to

```
select 2nd C
```

The user chooses a column with the cursor. Selecting that column with the trigger shall cause that column to be the 2nd boundary column of the area to be reflected. The command prompt shall change to

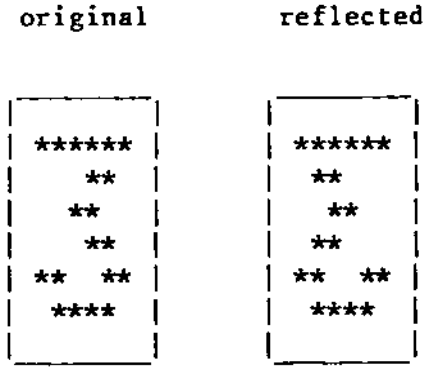
```
select C axis
```

The user chooses a column between the boundary columns or a position between two columns within the boundary columns with the cursor. Selecting the chosen axis with the trigger shall cause the columns from the 1st boundary to the 2nd boundary inclusive to be reflected about the selected axis.

Columns reflected outside the pixel map shall be lost. Columns outside the boundary columns shall be replaced if the reflection axis is not centered between the boundary columns.

This command shall remain in effect until the user types another command letter.

For example, reflections on the center "|" axis for the whole character "3" is shown below.



3.2.3.2.36 "<" Command - Rotate 90 Degrees Counterclockwise

The "<" command shall be valid in modes 2 (B0), 3, 6 (B1), and 7 (B2).

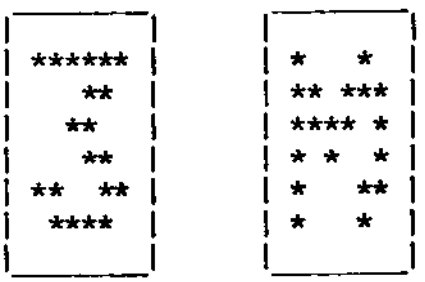
The "<" command shall display

rotate, top <

for the command name. There is no command prompt.

The large editing pixel map shall be rotated counterclockwise by 90 degrees. The command shall terminate upon completion of the rotation.

For example, rotation of the character "3" by 90 degrees counterclockwise is shown below.



3.2.3.2.37 ">" Command - Rotate 90 Degrees Clockwise

The ">" command shall be valid in modes 2 (B0), 3, 6 (B1), and 7 (B2).

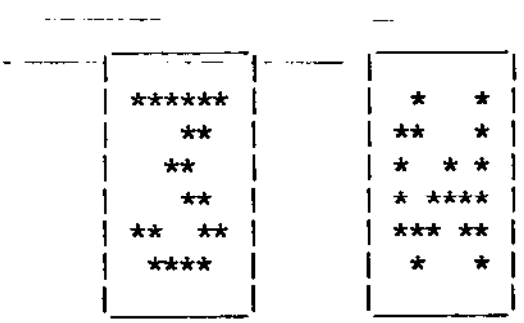
The ">" command shall display

rotate, top >

for the command name. There is no command prompt.

The large editing pixel map shall be rotated clockwise by 90 degrees. The command shall terminate upon completion of the rotation.

For example, rotation of the character "3" by 90 degrees clockwise is shown below.



3.2.3.2.38 "/| " (ATARI Key) Command - Toggle or Cycle Pixels

The "/| " command shall be valid in all graphics modes.

The "/| " command shall display

Toggle pixels

for the command name. There is no command prompt.

In modes 2 (B0), 3, 6 (B1), and 7 (B2), all "0" pixels in the large editing pixel map shall be changed to "1" pixels and all "1" pixels shall be changed to "0" pixels. In mode 4 and 5, all "00" pixels shall be changed to "01", all "01" pixels shall be changed to "10", all "10" pixels shall be changed to "11", and all "11" pixels shall be changed to "00" pixels.

The command shall terminate upon completion of the toggling or cycling.

Note: the ATARI Key and the "T" command perform the same operation. The "T" command only works on the selected pixel, row of pixels, or column of pixels. The ATARI Key works on the whole character bit map. Each press of the ATARI Key shall cause one toggle or value change.

3.2.3.2.39 "=" Command - Save Character

The "=" command shall be valid in all graphics modes.

The "=" command shall display

  char =

for the command name and shall display

  select character

for the command prompt.

The user selects a character using any method from Section 3.2.3.2.5. The large editing pixel map shall be saved in the font at that character index.

This command shall terminate upon selection of a character.

3.2.3.2.40 "*" Command - Remember Cursor Position

The "*" command shall be valid for all graphics modes.

The "*" command shall display

  remember cursor

for the command name. There is no command prompt.

The cursor position when the "*" command is invoked shall be remembered for use by the "." command. The command shall terminate after the cursor position is remembered.

Note: this command is especially useful when the user selects a character from the strike of a font. By moving the cursor to the character and invoking the "*" command, that character's position in the strike will be remembered. Then when the time comes to save that character, the "." command moves the cursor back to the same character in the strike of the font.

3.2.3.2.41 "." Command - Restore Cursor Position

The "." command shall be valid for all graphics modes.

The "." command shall display

restore cursor

for the command name. There is no command prompt.

The cursor shall be returned to the position last remembered from the previous "*" command. If no position was saved with a previous "*" command, the error message

none remembered

shall be displayed. The command shall terminate after the cursor is restored or the error message displayed.

Note: this command is especially useful when the user selects a character from the strike of a font. By moving the cursor to the character and invoking the "*" command, that character's position in the strike will be remembered. Then when the time comes to save the character, the "." command moves the cursor back to the same character in the strike of the font.

3.2.3.2.42 ESC Command - Help

The ESC command shall be valid in all graphics modes.

The ESC command shall display the Font Editor Help Screen Figure 3.2.3.2.42. Return from the Font Editor Help Screen shall occur when the START key is pressed. The state of the display and the editing in progress shall not be affected by use of the ESC command.

3.2.3.2.43 BRK Command - Cancel Command and Reset

The BRK command shall be valid in all graphics modes.

The BRK command shall cancel and reset any command that is waiting for user selections or data entry. Any partial selections shall be removed and the Font Editor shall accept the next keystroke as a command keystroke.

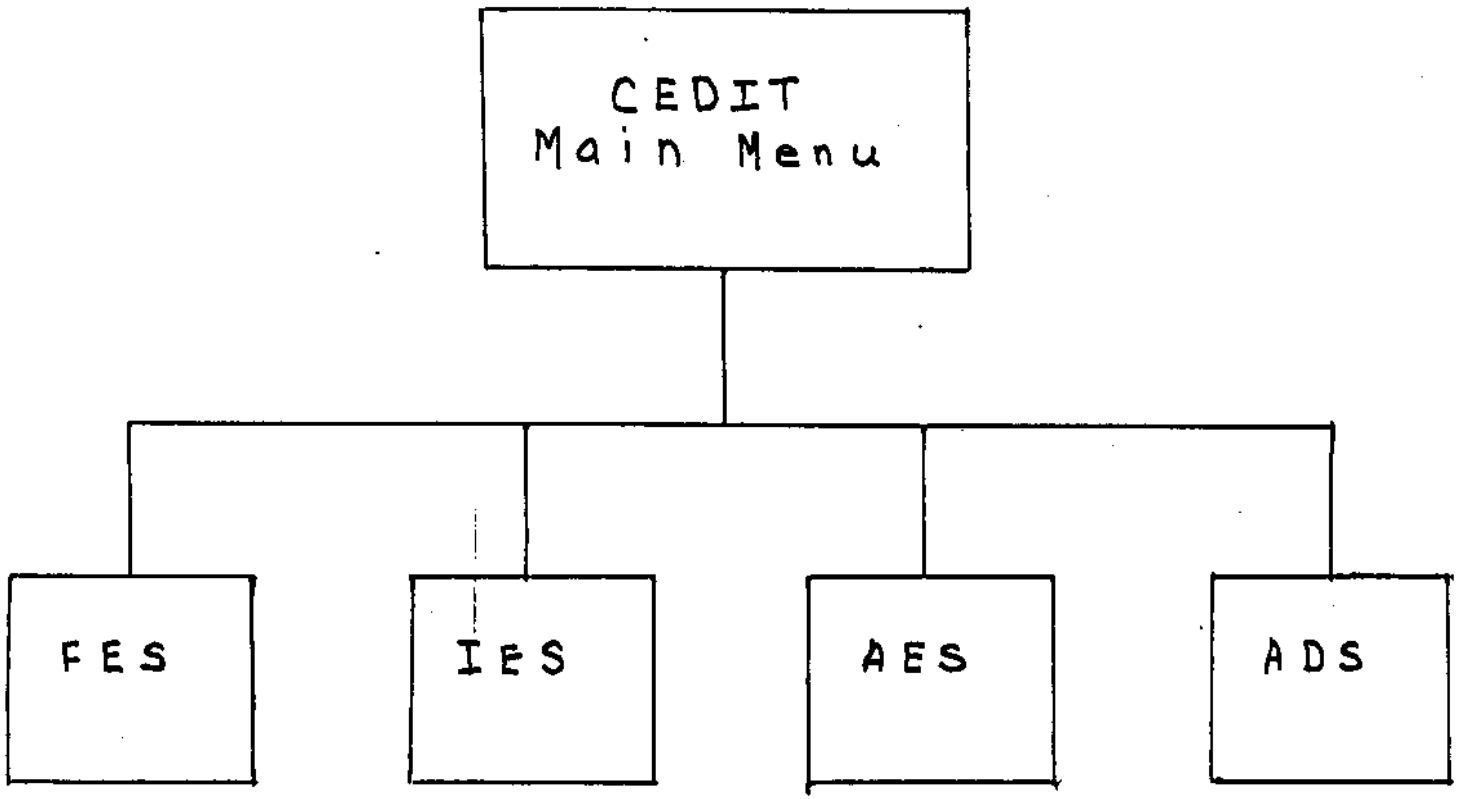


Figure 3.2.3

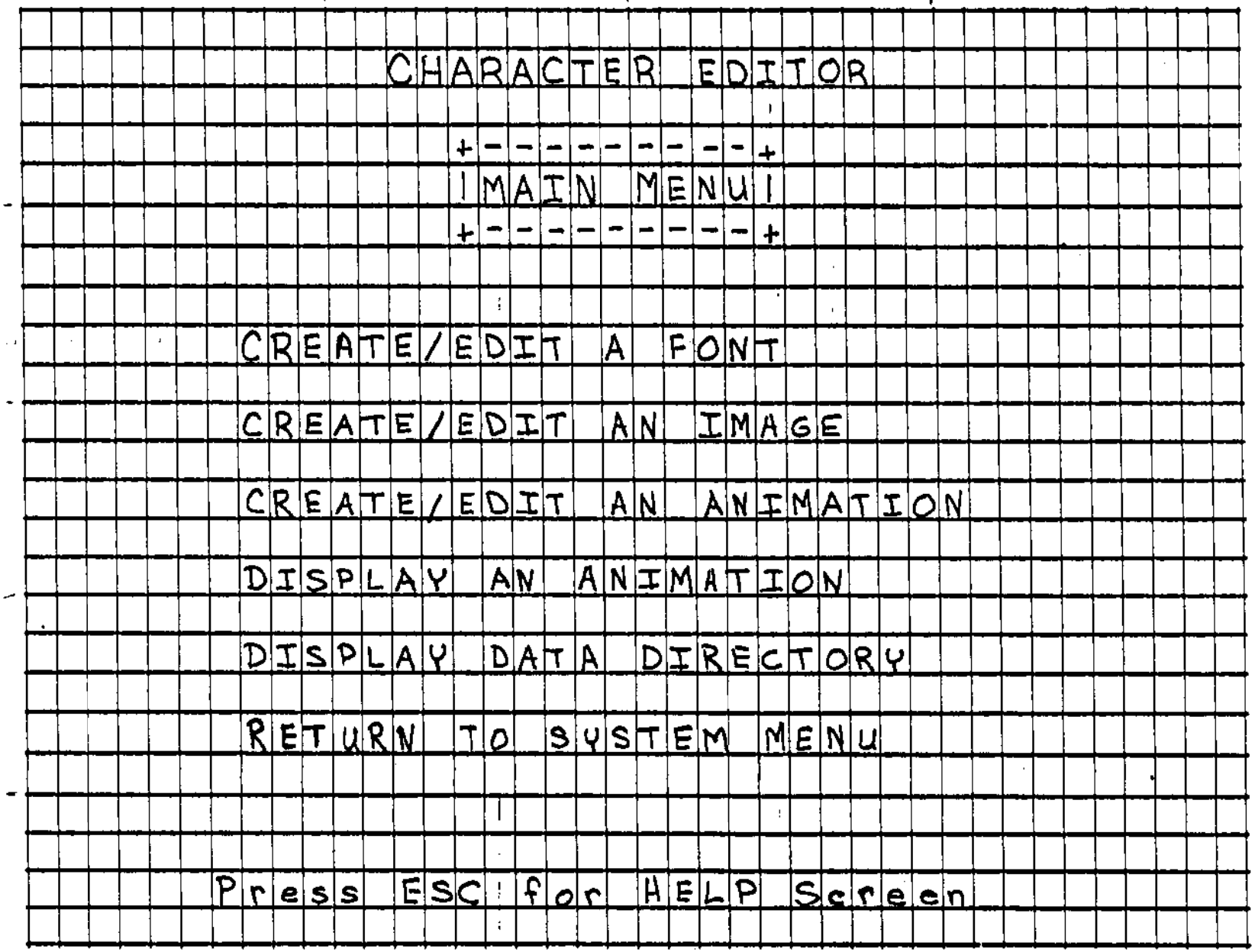

CHARACTER EDITOR
+----------+
|MAIN MENU|
+----------+
CREATE/EDIT A FONT
CREATE/EDIT AN IMAGE
CREATE/EDIT AN ANIMATION
DISPLAY AN ANIMATION
DISPLAY DATA DIRECTORY
RETURN TO SYSTEM MENU
Press ESC for HELP Screen

Figure 3.2.3.1

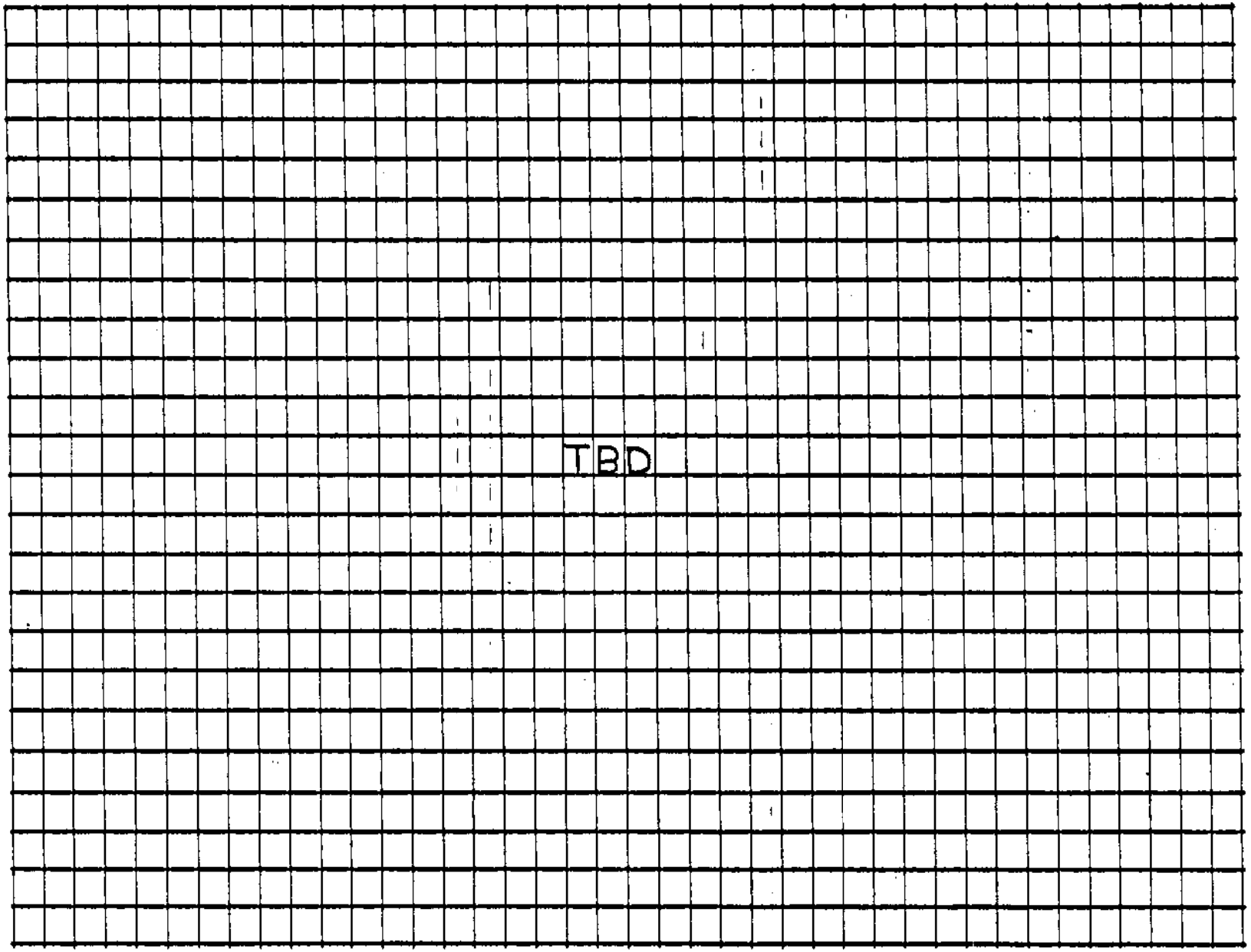


Figure 3.2.3.2.42

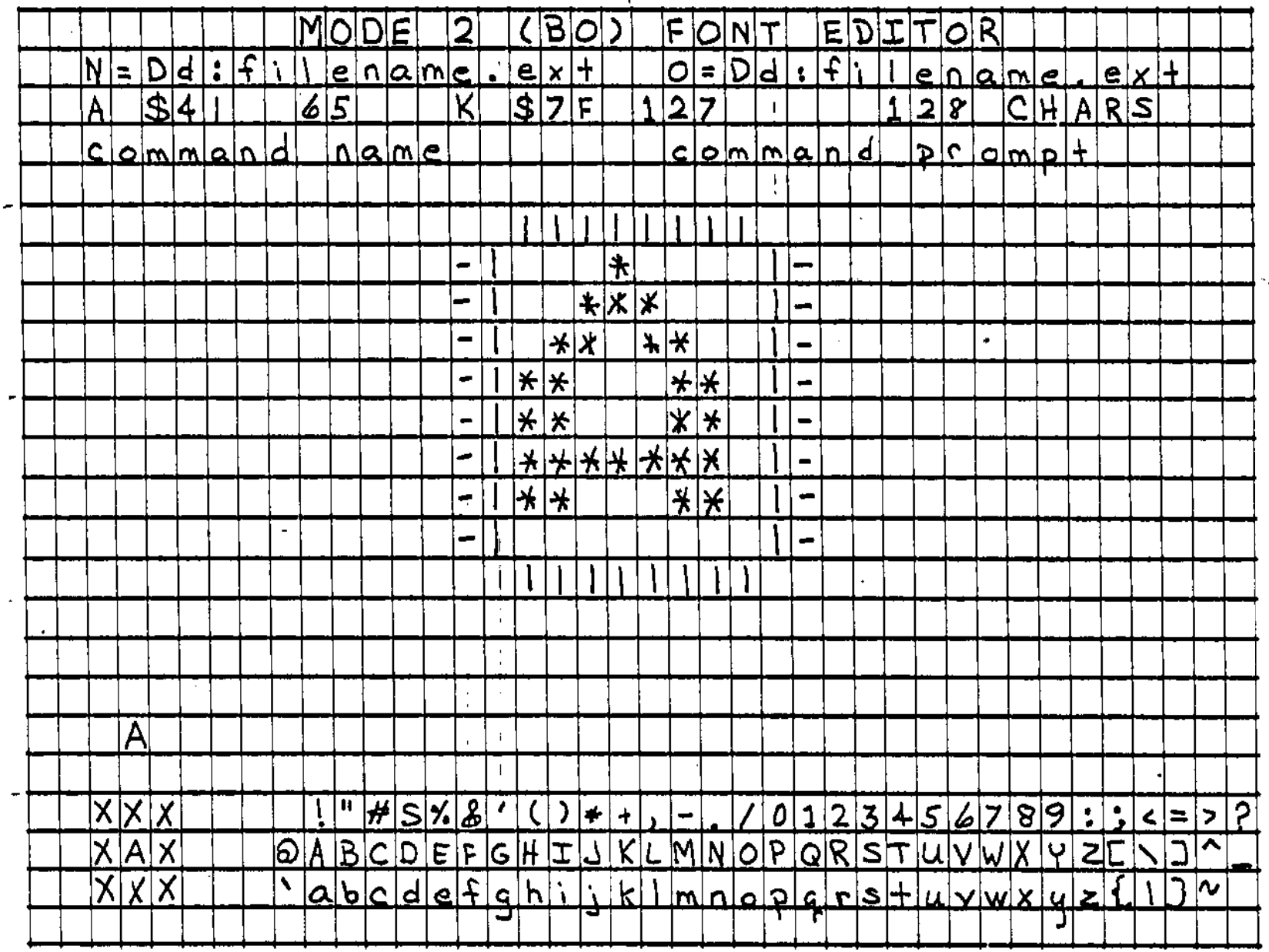


Figure 3.2.3.2.1