SCREEN EDITOR

PRELIMINARY USER GUIDE

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1.0 LOADING THE SCREEN EDITOR

Load the system diskette in Drive 1, and load DOS. Enter L, Binary Load, and then enter the module name, SCREEN. The Screen Editor will proceed to load.

Note: Cartridges must be removed, the Screen Editor requires the entire 48K of RAM.

2.0 MENU SELECTION

Selections are made by moving the inverse-video menu cursor over the displayed options. The console OPTION key moves the cursor vertically, and the console SELECT key moves the cursor horizontally. On most menus, the joystick will also move the menu cursor. Press the START key, or the joystick trigger, to invoke the selection.

3.0 SCREEN EDITOR MAIN MENU

3.1 Load Data Files

Previously saved files from the Display List Editor, Player/Missile Editor, Character Editor, and the Screen Editor can be loaded.

3.2 Create/Edit Screen Image

After selecting the screen mode and display options, the edit screen is opened. The edit functions available are described in the following sections.

3.3 Save Screen Image

The current edit screen is saved to diskette. The display list and screen image data are saved, and other defined data can optionally be included in the save file.

3.4 Clear User Data Areas

The data buffers can be selectively cleared, or the entire 12K Buffer area can be cleared.

Note: Clearing the Screen Image also clears the display list and deallocates the animation buffers.

3.5 Display Data Directory

The directory file of the selected disk drive is read and displayed.

3.6 Return to DOS

The editor is closed, and control is returned to DOS.

4.0 SELECTION OF COLOR REGISTERS

4.1 The currently selected color register may be changed by pressing the R key, and then pressing a valid register number (0, 1, 2, 3, or 4).

4.2 R4 is the background color in all modes.

4.3 4-color modes use R0, R1, and R2 in addition to R4.

4.4 2-color modes use R1 and R2.

4.5 In Antic mode F, selection of R0 or R3 produces controlled artifacting.

5.0 CHANGING THE COLOR REGISTER CONTENTS

5.1 The H (change Hue) and L (change Luminosity) commands can be used in the edit mode to alter the contents of the active color register.

5.2 The H or L must be followed by a single hex digit, or by the < or > keys.

5.3 The command must be terminated by RETURN to save the new color settings.

5.4 Pressing BREAK, will terminate the command, but restores the register contents to its original setting.

6.0 CREATE/EDIT IMMEDIATE KEY FUNCTIONS

These functions are invoked by typing the command character. The edit cursor will stop blinking to indicate that a function has been invoked. A confirmation tone will signal function completion or termination.

6.1 R - Register Select

- Enter R
- Enter register number (0, 1, 2, 3, or 4)

6.2 H - Hue

- Enter H
- Enter hex digit, or '<', or '>'
- Terminate with RETURN to save new setting.
- Terminate with BREAK to restore original setting.

6.3 L - Luminosity Change

- Enter L
- Enter hex digit, or '<', or '>'
- Terminate with RETURN to save new setting.
- Terminate with BREAK to restore original setting.

6.4 T - Display Text

- Enter T
- Enter text
- Terminate with RETURN or BREAK

6.5 V - Vector Draw

- o Enter V
- o Press trigger or RETURN to mark point and draw line (up to 16 line segments)
- o Press DELETE BACKS key to remove last line segment
- o Press SHIFT DELETE BACKS to remove entire vector list
- o To terminate function, press the Trigger or RETURN without moving the edit cursor; or press BREAK

6.6 E - Ellipse/Circle Generator

- o Enter E
- o Position edit cursor at center, and press trigger or RETURN

To generate a ellipse, two offsets (vertical and horizontal) are necessary:

- o Position edit cursor for offset 1, and press trigger or RETURN
- o Position edit cursor for offset 2, and press trigger of RETURN

To generate a circle, only a radius is required:

- o Position edit cursor along either X or Y axis (from center) to establish the radius, and press the trigger or RETURN TWICE.
- o This function can be aborted by pressing BREAK

6.7 B - Block Fill

- o Enter B
- o Position edit cursor at point 1, press RETURN or trigger.
- o Position edit cursor at point 2, press RETURN or trigger.

The two points determine opposite corners of a rectangle which will be filled. The relative location of points 1 and 2 is immaterial.

- o The function can be aborted by pressing BREAK

6.8 F - Flood Fill

- o Enter F
- o Position Edit cursor inside the area to be flooded.
- o Press RETURN or trigger
- o This function can be terminated by pressing the BREAK key.

6.9 D - Toggles the display of P/M data

6.10 A - Select Alternate Character Set (if loaded)

6.11 S - Select Standard Character Set (default)

6.12 SHIFT CLEAR - Erase Screen Image

- o A warning will be displayed, press START to proceed with screen clear, or press BREAK to abort.

6.13 CTRL CLEAR - Screen Display

- o Removes the blinking edit cursor and the command window. The system will not accept input other than the BREAK key, which restores the Edit mode.

6.14 Space Bar - Toggles the display of the Edit Command Window.

7.0 Create/Edit Command Functions

The command functions are displayed on the function line of the Edit Command Window. These functions are invoked by using the SELECT key to move the imverse-video cursor over the desired function, and then pressing the START key.

7.1 COLOR Command

This command causes the COLOR Command Window to be displayed, and freezes the Edit Screen. The COLOR Command window is a display of the five color registers, with a color block that displays the color defined by each register. This is a convenience to more easily associate the screen colors with the registers. Colors may be changed by using the same commands (H and L) available as key functions. Use the SELECT key to move the cursor to the register to be changed. The H and L functions must be terminated (RETURN or BREAK) before the cursor can be moved to another register.

The command function is terminated by pressing the START key to return to the Create/Edit mode. Any changes to the register contents are saved, and the register which was 'active' before initiation of the command function is restored.

Pressing the BREAK key will also terminate the Command function, but will restore all color registers to their state prior to entering the function.

7.2 MOVE Command

This command allows a rectangular segment of the edit screen to be moved to a new location.

The original image is erased with background color. The size of the segment to be moved is limited only by the amount of buffer space available in the system. This is variable, and depends on the edit screen mode, and the allocation of buffer space for P/M data, an alternate character set, or animation buffers.

The command window will display prompts to mark the starting and opposite corners of the segment to be moved. This is done by moving the edit cursor to the desired points, and then pressing either the RETURN key or the trigger. When the segment is marked, a prompt will ask for the target location.

7.2 MOVE Command (Cont')

Move the edit cursor to the new starting corner, press the RETURN key or the trigger, and the system will move the segment to the new location. A confirmation tone will be sounded, and the Create/Edit mode will be restored.

Pressing the BREAK key at any time will abort the command, and restore the CREATE/Edit Mode.

7.3 DUP Command

This command allows a rectangular segment of the edit screen to be duplicated at one or more locations on the screen. When this function is invoked, the command window will display a selection of four sub-functions. These are:

COPY - Direct Duplication of the defined segment. The original image is retained, and the copy is destructive, i.e. any screen data under the copy is lost.

REFLECT - The defined segment is reflected about the vertical axis, and then copied to a new location.

INVERT - The defined segment is inverted about the horizontal axis, and then copied to a new location.

FILL - The defined segment is plotted repeatedly as a background pattern. The entire screen is plotted with the pattern.

First use the SELECT key, or the joystick, to choose the desired function, then press START, or the trigger, to proceed. The command window will display prompts to mark the segment, and then prompt for the target location.

The fill function does not require a target location. As soon as the 'pattern' segment is defined, the screen is plotted, and the function is terminated.

The copy function can be used repeatedly by continuing to define new target locations. The function is terminated by pressing the trigger or RETURN key a second time, without moving the edit cursor. Pressing the BREAK key will also terminate the function at any time.

7.4 P/M Command

This command function allows the player/missile display parameters to be altered. If there are no P/M's defined when this function is invoked, the command will display a message to that effect, and provide the option to load data.

If P/M's are defined, then the command window will display the parameter selections. The SELECT keys moves the cursor, and the START key will cause a new command window to appear.

WIDTH - This command window displays the 'width' settings. The SELECT and OPTION keys move the cursor to choose the particular Player or missile. The 'W' key then cycles the width setting from: 1=Standard, to 2=Double width, to 3=Quad width.

The START key effects a return to the P/M Parameter Selection Window.

POSITION - This window displays the horizontal position registers for all the players and missiles. These can be altered by selecting a player or missile with the cursor, then moving the player or missile with the joystick or the arrow keys.

COLOR - This window displays the contents of the player color registers. These can be altered by selecting a player with the cursor, or then using the H and L key functions to adjust the color.

PRIORITY - This function allows the P/M Priority register to be set. Each individual bit may be set on or off.

From the Parameter Selection Window, the BREAK key will terminate the command, and return to the Create/Edit mode.

7.5 Animate

This command function invokes the animation control menu. This is discussed in section 8.

7.6 SAVE

This command function allows an edit screen to be saved. Either the entire screen image or a screen segment can be saved. The command window will display the selection.

If FULL SCREEN is selected, then the SAVE screen described in Section 3.3 will be displayed.

If SCREEN SEGMENT is selected, then the Segment must be defined, and the command window will display prompts. After marking the segment, the SAVE screen will be displayed.

After the save function is completed, the create/edit mode is restored.

7.7 EXIT

This function saves the create/edit image and mode settings, and returns to the MAIN MENU.

8.0 ANIMATION

This command function allows for the definition, setup, and display of playfield animation.

The effect of playfield animation is achieved by successively redefining the playfield screen ram with predefined animation 'frames'. These frames are screen segments of equal size.

The animation frame buffers are allocated when the size of the frame segment is defined. This occurs when buffers are loaded or when the first segment is moved into a buffer. The number of buffers available is a function of the screen mode and the segment size. The maximum number of buffers is sixteen.

The animation function menu has the following options.

8.1 Load Animation Buffers

Previously defined animation buffers will be loaded if there is adequate buffer space.

8.2 Move, Copy, Display, and Erase

This function provides for moving screen segments into the buffers, copying from buffer to buffer, displaying from a buffer to the screen, or erasing a single buffer.

8.3 Save Animation Buffers

The currently defined animation buffers can be saved to the diskette.

8.4 Display Sequence

The buffer screen will be displayed, and the display sequence must be defined. Select a buffer with the box cursor and press the trigger or RETURN key. The selected buffer number will appear in the sequence string. The sequence can be any length to a maximum of sixteen.

The last element can be deleted by pressing the DELETE BACKS key.

The entire sequence can be deleted by pressing the SHIFT and DELETE BACKS keys.

When the sequence is defined, press START to proceed.

8.4 Display Sequence (Cont')

The next prompt is for the initial display position. Move the edit cursor to the target location and press the trigger or RETURN.

The following prompt is for setting the display control parameters. If the buffers are transparent, then 'background' in the buffer data will not be mapped into the playfield. When transparency is selected, then the background refresh is selected by default.

When transparency is not selected, the background refresh is optional. When selected, the playfield under the displayed frame buffer is saved, and restored when the location of the frame buffer changes.

After selecting the settings of these options, press START to proceed.

The first animation frame will be displayed. The default starting condition is 'Single-Step'. Each time the START key is pressed, the frame will change.

Entering a digit, 1 to 9, will start the automatic frame sequence display. The value of the digit determines the VBLANK rate of frame change. A '9' is maximum speed, a frame change every VBLANK, if possible. The VBLANK rate doubles for each descending value, i.e. an '8' is a frame change every 2 VBLANKS, a '7' is a frame change every 4 VBLANKS, etc.

Motion is achieved by changing the location of the frame buffer display. Motion is controlled by the joystick. There are two control parameters, the first is the rate at which the joystick input is sensed. This value is set by entering a SHIFT and digit, 1-9. As described above, the digit determines the VBLANK rate of input. The default setting is once every 4 VBLANKS, (SHIFT 7).

The second parameter is the move increment. The display location is moved from 1 to 8 pixels for each joystick 'hit'. This value, the move increment, is set by entering a CTRL and digit, 1 to 8. The default value is 1 pixel per move, (CTRL 1).

The system remains in automatic display mode, until the '0' key is entered. This stops the automatic frame change, but the system is still in Animation Display mode.

The BREAK key must be pressed to return to the Create/Edit mode.

8.5 Clear Animation Buffers

This function releases and deallocates the animation buffers. All data in the buffers is lost.

8.6 Return to Create/Edit

This function restores the Create/Edit mode.

- Animation Buffer Definition Block 16

  - Mode 1
  - Buffer – # of Rows 1
  - Buffer – # of Columns 2
  - Buffer – Bytes per Row 1
  - Shift Mask – pixel size 1
  - Data Bytes per Row 1
  - DELTA Row 1
  - DELTA Col 2
  - Start RAM Address (offset) 2
  - Left Mask 1
  - Right Mask 1
  - Control Flags (Truncation) 1
  - New Left Mask 1

- Buffer Data – for each buffer

  - LEFT MASK 1
  - RIGHT MASK 1
  - Data Bytes per Row 1

  - Buffer —
    (Rows * Buffer BPR) n

- EOF 1 $88

II. PLAYER/MISSILE EDITOR
FILE FORMATS

description	byte #s	length	data
SWEAT identification	1 - 5	5	S W E A T
period	6	1	.
default extension	7 - 9	3	P M G
SWEAT editor #	10	1	2
file type	11	1	$00 = all player/missile $10 = animation sequence & buffers $20 = animation buffers $40 = single player $80 = missiles
DMA control reg.	12	1	
priority reg.	13	1	

the data that follows is file type dependent

if file type = $00 (all player/missiles) then

description	byte #s	length	data
missile #3 width	14	1	0 - 3
missile #2 width	15	1	0 - 3
missile #1 width	16	1	0 - 3
missile #0 width	17	1	0 - 3
missile #3 hor. pos.	18	1	0 - 255
missile #2 hor. pos.	19	1	0 - 255
missile #1 hor. pos.	20	1	0 - 255
missile #0 hor. pos.	21	1	0 - 255
playfield #3 color	22	1	
player #0 width	23	1	0 - 3
player #1 width	24	1	0 - 3
player #2 width	25	1	0 - 3
player #3 width	26	1	0 - 3
player #0 hor. pos.	27	1	0 - 255
player #1 hor. pos.	28	1	0 - 255
player #2 hor. pos.	29	1	0 - 255
player #3 hor. pos.	30	1	0 - 255
player #0 color	31	1	
player #1 color	32	1	
player #2 color	33	1	
player #3 color	34	1	
background color	35	1	
end-of-header	36	1	$FF
missile (#3-0) data	37	256	if single scan-line resolution
		128	if double scan-line resolution
player #0 data		256	if single scan-line resolution
		128	if double scan-line resolution
player #1 data		256	if single scan-line resolution
		128	if double scan-line resolution
player #2 data		256	if single scan-line resolution
		128	if double scan-line resolution
player #3 data		256	if single scan-line resolution
		128	if double scan-line resolution

if file type = $10 (animation sequence & buffers) then

description	byte #s	length	data
player width	14	1	0 - 3
player hor. pos.	15	1	0 - 255
player color	16	1	
number of buffers	17	1	1 - 16
sequence length	18	1	1 - 16
sequence (buffer) #	(5)		1 - 16
			repeat sequence length times
buffer data		256	if single scan-line resolution
		128	if double scan-line resolution
			repeat number of buffers times

if file type = $20 (animation buffers) then

description	byte #s	length	data
player width	14	1	0 - 3
player hor. pos.	15	1	0 - 255
player color	16	1	
number of buffers	17	1	1 - 16
buffer data	(4)	256	if single scan-line resolution
		128	if double scan-line resolution
			repeat number of buffers times

if file type = $40 (single player) then

description	byte #s	length	data
player width	14	1	0 - 3
player hor. pos.	15	1	0 - 255
player color	16	1	
end-of-header	~~17~~	~~1~~	~~$FF~~
player data	(4)	256	if single scan-line resolution
		128	if double scan-line resolution

(6)

if file type = $80 (missiles) then

description	byte #s	length	data
missile #3 width	14	1	0 - 3
missile #2 width	15	1	0 - 3
missile #1 width	16	1	0 - 3
missile #0 width	17	1	0 - 3
missile #3 hor. pos.	18	1	0 - 255
missile #2 hor. pos.	19	1	0 - 255
missile #1 hor. pos.	20	1	0 - 255
missile #0 hor. pos.	21	1	0 - 255
playfield #3 color	22	1	
player (missile) #0 color	23	1	
player (missile) #1 color	24	1	
player (missile) #2 color	25	1	
player (missile) #3 color	26	1	
end-of-header	27	1	$FF
missile (#3-0) data		256	if single scan-line resolution
		128	if double scan-line resolution

(14)

III. CHARACTER EDITOR

	(LENGTH)	(DATA)
• SWEAT IDENTIFICATION HEADER	10	SWEAT.FNT 3
• FILETYPE:	1	

BIT 7 = SIZE = 0 = 64 Char. Set
1 = 128 Char. Set

BIT 6 = 1 ⇒ FONT
5 = 1 ⇒ Map Image
4 = 1 ⇒ Animation

3, 2, 1, 0 ⇒ Antic Mode

• COLORS: PF0, PF1, PF2, PF3, BAK	5	
• Character Set Data	(512) (1024)	
• EOF	1	$FF