Date: June 4, 1986

Author: Fern Bachman

Subject: Control Panel ERS

Document Version Number: 00:80

### Revision History

00:00 Initial release.

00:10 Name changed from Menu to Control Panel.

Volume selections on sound screen changed from Left Volume/Right Volume to just Volume. Stereo was removed as an option.

Option to boot from RAM Disk added to slot select screen.

Flash rate and double click time has been added to language screen.

System will ask Keyboard micro which set of 8 languages to prompt user with for language/Keyboard layout.

First layout of BATTERYRAM proposed.

System defaults for parameters defined.

CR Delay, LF Delay, FF Delay removed as options. No longer used in system.

Advanced features added to language screen.

What happens on power up section added.

00:20 Mouse interface scrapped (at least for now).

RAM Disk options added.

50/60 hertz video option added.

DCD handshake option added for serial ports.

Yes/No options have all been changed to No/Yes options.

Mark and Space parity options have been removed since SCC can't do them.

Default format for day, month, year changed from DD/MMVYY to MMVDD/YY Mouse resolution option added.

00:30 Hertz selection order has been switched.

Color Text, Color Background, Color Border changed to Text, Background, Border respectively.

Monochrome Text, Monochrome Background, Monochrome Border changed to Text, Background, Border respectively.

Dark gray/light gray order switched.

Slot options order of selection changed.

Startup Slot order of selection changed.

Repeat speed order of selection changed.

Delete changed to Backspace to match new key caps.

Numbers versus ASCII for languages and layouts changed.

'Dual Speed: Times' changed to 'Dual Speed:'.

Dual Speed options changed to Normal/Fast instead of 1/2.

BATTERYRAM layout updated.

The control panel will not enable the Spanish character set to display layouts and language names.

English (U.S.) / English (U.K.) replaced with U.S.A. / U.K.

00:40 BATTERYRAM order changed.

RAM disk sreen added.

System Speed change had RAM disk options removed.

Submenu titles have been added.

All screens were updated!!!!!!

Standards definition for display colors has been added.

BATTERYRAM order changed. 00:50

00:60

RAM disk screen changed.

Screen ASCII updated.

DSR and XON/XOFF handshaking options added to serial port screens.

Data Bits and Stop Bits combined into 1 line.

Default system colors for defaults changed to pleasant colors from

eye straining colors. BATTERYRAM order changed.

Hertz selection on Display screen made read only.

Order of items on Display screen changed.

'Chimes' changed to 'Pitch'

00:70 Screen layouts, wording, and human interface changed. See screens attached.

Color names displayed on Display screen.

System default speed changed to Fast.

Display type changed to Color.

Special entry to Control Panel added.

Ability to restore all system standards with 1 Keystroke added.

Foreign translation vector explained.

00:80 RAM disk increments on RAM disk screen are now determined by adding 32K.

'l' indicates changes text.

### General

Control Panel is a hardware configuration program resident in one of Columbia's ROMs. It is invoked whenever the user does a power up with the closed apple key pressed and whenever the user does a coldstart with the CONTROL, closed apple key and RESET. The program must also be callable from an application program as a desk accessory. Control Panel will also be automatically displayable in 40 or 80 columns. DeskAccessory Manager, in firmware, will call the Control Panel program. The Control Panel program therefore will be Columbia's first desk accessory. As such it will set the rules (standards) for all future desk accessories.

Control Panel's main functions are to allow the user to experiment with different system configurations and at the same time permanently store any changes in the battery backed up RAM (hence forth called BATTERYRAM) and to change the system time. The BATTERYRAM is actually a Macintosh clock chip which has 256 bytes of battery backed up RAM for system parameter storage.

Control Panel is to be written as simple (intuitive) to use as possible, bearing in mind that the code must be as short as possible for two reasons. Reason one is that Control Panel must be translated into many languages. Reason two is that this code will be in ROM and ROM space is very precious.

A vector called MSGPOINTER (located in bank E1) is available as a hook to all the ASCII which appears in the Control Panel. MSGPOINTER is a 3 byte value consisting of a 24 bit pointer to an address listing table. This listing table may be in any bank in Cortland. For the U.S.A. control panel ASCII the pointer points into the ROM. The address listing table consists of pointers to text strings in the same bank as the table. The address listing table and the format of the text strings is defined in the ROM listing of the Control Panel. MSGPOINTER is accessed by calls to the miscellaneous tool locator. MSGPOINTER points to RAM tables and strings the Control Panel will perform as it does now except that it will use these for all messages and text instead of the ones built-in.

The functions which may be changed via Control Panel are as follows.

### Selection

### **Function**

_		
Por	Ť	1

Set up all related functions for port 1.

Available options are:

<u>Line option</u>	<u>Choice</u>	s for Option
Device Connected:	Default	Printer
		Modem
Line Length:	Default	Unlimited
	•	40
		72
		80
		132
Delete First LF after	CR: Default	No
		Yes
Add LF after CR:		No

Control Panel

June 4, 1986 Apple Confidential

Page #3

```
Default
                                       Yes
Echo:
                       Default
                                       No
                                       Yes
                       Default
Buffering:
                                       No
                                       Yes
                                       50
Baud:
                                       75
                                       110
                                       134.5
                                       150
                                       300
                                       600
                                       1200
                                       1800
                                       2400
                                       3600
                                       4800
                                       7200
                       Default
                                       9600
                                       19200
Data/Stop Bits:
                                       5/1
                                       5/2
                                       6/1
                                       6/2
                                       7/1
                                       7/2
                                       8/1
                       Default
                                       8/2
Parity:
                                       Odd
                                       Even
                       Default
                                       None
DCD Handshake:
                                       No
                       Default
                                       Yes
DSR/DTR Handshake:
                                       No
                                       Yes
                       Default
XON/XOFF Handshake:
                       Default
                                       No
                                       Yes
Set up all related functions for port 2.
Available options are:
<u>Line option</u>
                                Choices for Option
Device Connected:
                                       Printer
                       Default
                                       Modem
Line Length:
                       Default
                                       Unlimited
                                       40
                                       72
                                       80
                                       132
Delete First LF after CR: Default
                                       No
                                       Yes
Add LF after CR:
                       Default
                                       No
                                       Yes
Echo:
                       Default
                                       No
                                       Yes
```

Port 2

Buffering:	Default	No Yes
Baud:		50 75 110 134.5 150 300 600
Data/Stop Bits:	Default	1200 1800 2400 3600 4800 7200 9600 19200 5/1 5/2 6/1 6/2 7/1 7/2 8/1
Parity:	Default	8∕2 Odd Even
DCD Handshake:	Default	None No
888 (878 11 1 1 1	Default	Yes
DSR/DTR Handshake:		No
14011 040 PP 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Default	Yes
XDN/XOFF Handshake:	Default	No
		Yes

Display

Selects all video specific options. Choosing type automatically causes color or monochome selections to appear on the rest of the screen.

Available options are:

Line option	<u>c</u>	Choices for Option
Type:	Default	Color
		Monochrome
Columns:	Default	40
		80
Hertz:	Default	60
		<b>5</b> በ

Color/Monochrome Selections

Text:

color name is displayed

black deep red dark blue purple dark green

```
dark gray
                                       medium blue
                                       light blue
                                       brown
                                       orange
                                       light gray
                                       pink
                                       light green
                                       yellow
                                       aquamarine
                       Default
                                       white
Background:
                             color name is displayed
                                       black
                                       deep red
                                       dark blue
                                       purple
                                       dark green
                                       dark oray
                       Default
                                       medium blue
                                       light blue
                                       brown
                                       orange
                                       light gray
                                       pink
                                       light green
                                       yellow
                                       aduamarine
                                       white
Border:
                             color name is displayed
                                       black
                                       deep red
                                       dark blue
                                       purple
                                       dark green
                                       dark gray
                       Default
                                       medium blue
                                       light blue
                                       brown
                                       orange
                                       light gray
                                       pink
                                       light green
                                       yellow
                                       aquamarine
                                       white
Standard Colors:
                                       No
                       Default
                                       Yes
     Standard Colors indicates whether the user's
     chosen colors match the Apple Standard values.
     In addition, if the user selects 'Yes' the
     current colors are switched to Apple Standards.
Allows default system bell sound (pitch) and volume
 to be selected via an indicator bar. Default is
midrange.
```

Sound

Speed/RAM Disk

Allows default system speed of either normal speed, 1 mhz, or fast speed, 2.6/2.8 (RAM/ROM) mhz.

Available options are:

Line option System Speed:

Choices for Option Default Normal

Fast

Allows default amount of free RAM to be used for a RAM Disk.

Available options are:

Line option Choices for Option Mininum RAM Disk Size: (minimum)K Maximum RAM Disk Size: (maximum)K

> Graduations between minimum and maximum are determined by adding or subtracting 32K to/from the RAM size displayed. Limited to O or 'Largest selectable' RAM disk size is reached. Default RAM Disk size is 0 minimum O maximum. RAM Disk size ranges from O to 'Largest selectable' RAM disk size.

Free RAM for RAM Disk: kkkkkk will be displayed on the screen. Free RAM = Total system RAM - 256K.

Current RAM Disk Size: KKKKKK will be displayed on the screen. Current RAM Disk size is determined by a call to the RAM disk driver.

Total RAM in Use: kkkkkk will be displayed on the screen.

Total RAM in Use = Total system RAM - Total Free RAM

Total Free RAM Disk: kkkkkk will be displayed on the screen. Total Free RAM is determined by a call to the memory manager.

Slots

Allows user to select either built in device or peripheral card for slots 1,2,3,4,5,6 and 7. Also allows user to select startup slot or scan slots at startup time.

Available options are:

•	
<u>c</u>	hoices for Option
Default	Printer Port
	Your Card
Default	Modem Port
	Your Card
Default	Built-in Text Display
	Your Card
Default	Mouse Port
	Your Card
Default	Smart Port
	Your Card
Default	Disk Port
	Your Card
	Built-in AppleTalk
	Default Default Default Default

•		Default	Your	Card
Startup	Slot	Default	Scan	
			1	
			2	
			3	
			4	
			5	
			6	
			7	
			RAM I	Disk
			ROM I	Disk

### Language

Allows user to select which keyboard layout, text display language, key repeat speed, delay to key repeat to use and advanced features. Layouts and languages are displayed which correspond to the hardware only. Layouts/languages not available with the user's hardware (keyboard micro and Mega//) are not displayed. The information on which layouts and languages are available come from the keyboard micro at power-up time.

(Chosen from table below)

Available options are: Line option

Text Display:

Keyboard: (Chosen from table below) Number ASC11 U.S.A. 1 U.K. 2 French 3 Danish 4 Spanish 5 Italian 6 German 7 Swedish 8 Duorak French Canadian 9 Flemish В Hebrew C Japanese Arabic E Greek F Turkish 10 Finnish 11 Portuguese 12 Tamil 13 Hindi 14 T1 15 T2 16 T3 17 T4 **T5** 18 19 Tó 14 L1 1B L2

```
10
     L3
1 D
                                  L4
     1E
                                  L5
     1F
                                  L۵
     ........
      The keyboard micro provides the pointer to the
      appropriate ASCII as listed in the above table.
       Keyboard Buffering:
                            Default
                                              No
                                              Yes
       Repeat Speed:
                            (indicator does these options)
                                          4 char/sec
                                          8 char/sec
                                         11 char/sec
                                         15 char/sec
                           Default
                                         20 char/sec
                                         24 char/sec
                                         30 char/sec
                                         40 char/sec
       Repeat Delay:
                           (indicator does these options)
                                         .25 sec
                                         .50 sec
                           Default
                                         .75 sec
                                         1.0 sec
                                         No repeat
       Double Click:
                            (indicator does these options)
                            (1 tick = 1/60th of a second)
                                          xx ticks (slow)
                                          xx ticks
                                          xx ticks
                           Default
                                          xx ticks
                                          xx ticks (fast)
       Flash Rate of Cursor:
                            (indicator does these options)
                            (1 tick = 1/60th of a second)
                                          xx ticks (slow)
                                          xx ticks
                           Default
                                          xx ticks
                                          xx ticks
                                          xx ticks (fast)
       Advanced Features
       Shift Caps/Lower Case:
                                Default
                                         No
                                         Yes
       Fast Space/Delete Keys:
                                Default
                                         No
                                         Yes
       Dual Key Speed:
                                Default
                                         Normal
                                         Fast
       High Speed Mouse:
                                Default
                                         No
                                         Yes
```

Clock

Allows the user to set the time and date and time

Control Panel

June 4, 1986 Apple Confidential

Page #9

date formats.

Available options are:

Line option Choices for Option 1-12 Month: 1-31 Day: 1904-2044 Year: Format: Default MM/DD/YY DD/MM/YY YY/MM/DD Hour: (depends on Format below) 1-12 or 0-23 Minute: 0-59 Second: 0-59 Format: AM-PM Default 24 hour

Quit

Returns user to calling application or if called from Keyboard does a startup function.

### BATTERYRAM Allocation

IMPORTANT NOTE: NO application program will be allowed to use the BATTERYRAM for its personal use. This must be stressed to all application writers.

BATTERYRAM must include encoded bytes for all options selected for Apple default values (Defaults get check marks beside them in the dialog boxes as the user flips through the options.)

Addition information stored in BATTERYRAM

Information

Set by Who

- AppleTalk node # 6
- AppleTalk firmware
- 2. PRODOS/16 parameters PRODOS/16

Manufacturing will place the standard Apple setup values into BATTERYRAM during the manufacturing cycle, except for keyboard layout and display language which will be determined by the keyboard attached. All items changeable by manufacturing and the Control Panel program may be changed by the users application program if desired, however only an Apple approved utility program should make changes to BATTERYRAM. Failure to enforce this will result in BATTERYRAM data being trashed. Once the data is trashed the system will NOT work. If BATTERYRAM is totally trashed or the battery dies the firmware will automatically use the Apple standard values to bring up the system. The dealer at this point can replace the dead battery and then the user can enter the Control Panel program to restore his system to his prior configuration.

The current BATTERYRAM layout starting at address \$00 is as follows:

Address	Port 1 selections
00	DFB \$00 ;This port is a: Printer
01	DFB \$00 ;Line Length: Unlimited
02	DFB \$00 ;Delete First LF after CR: No
03	DFB \$00 ;Add LF after CR: No
04	DFB \$00 ;Echo: No
05	DFB \$00 ;Buffering: No
06	DFB \$0D ;Baud: 9600
07	DFB \$00 ;Data/Stop Bits: 8/2
08	DFB \$02 ;Parity: None
09	DFB \$01 ;DCD Handshake: Yes
0A	DFB \$01 ;DSR/DTR Handshake: Yes
08	DFB \$01 ;XON/XOFF Handshake: No
	Port 2 selections
00	DFB \$01 ;This port is a: Modem
<b>0</b> D	DFB \$00 ;Line Length: Unlimited
OE .	DFB \$00 ; Delete First LF after CR: No
0F	DFB \$00 ;Add LF after CR: No
10	DFB \$00 ;Echo: No
11	DFB \$00 ;Buffering: No
12	DFB \$07 ;Baud: 1200

```
DFB $00 ;Data/Stop Bits: 8/2
13
14
                       DFB $02 ; Parity: None
15
                       DFB $01; DCD Handshake: Yes
                       DFB $01 ;DSR/DTR Handshake: Yes
16
17
                       DFB $01 ;XON/XOFF Handshake: No
                       Display selections
18
                       DFB $01 ;Type: Monochrome
19
                       DFB $00 ;Columns: 40
1A
                       DFB $01 ;Text: (white)
1 B
                       DFB $0F ;Background: (medium blue)
1 C
                       DFB $06 ;Border: (dark gray)
1 D
                       DFB $05 ;Hertz: 60
                       Sound selections
1E
                       DFB $05 ; Volume: |----*
1F
                       DFB $06; Pitch: |------|
                       Speed selections
20
                       DFB $00 ;Speed: Normal
                       Slots selections
21
                       DFB $00 ;Slot 1: Port 1
22
                       DFB $00 ;Slot 2: Port 2
23
                       DFB $00 ;Slot 3: Text Display
                       DFB $00 ;Slot 4: Mouse
24
25
                       DFB $00 ;Slot 5: Smart Port
26
                       DFB $00 ;Slot 6: Disk Port
27
                       DFB $01 ;Slot 7: Your Card
28
                       DFB $00 ;Startup Slot: Scan
                       Language selections
29
                       DFB $00 ; Text Display: U.S.A.
24
                       DFB $00 ; Keyboard: U.S.A.
2B
                       DFB $00 ; Keyboard Buffering: No
2C
                       DFB $04 ;Repeat Speed: |------
2D
                       DFB $02 ;Repeat Delay: |----*
2E
                       DFB $02 ; Double Click: |-----
2F
                       DFB $02 ; Cursor Flash: |----*
30
                       DFB $00 ;Shift Caps/Lower Case: No
31
                       DFB $00 ;Fast Space/Delete Keys: No
32
                       DFB $00 ;Dual Key Speed: Normal
33
                       DFB $00 ; High Speed Mouse: No
                       Clock selections
34
                       DFB $00 ; Format: MM/DD/YY
35
                       DFB $00 :Format: AM-PM
```

36 37	DFB \$00 ;Minimum RAM Disk Size: 0 DFB \$00 ;Maximum RAM Disk Size: 0
38 41	DS \$09,0 ;Count/Numbers of languages DS \$11,0 ;Count/Numbers of layouts
52	DS \$2E,\$00 ;Pad to AppleTalk node number
80	DFB 0 ;AppleTalk node number
81	DS \$20,\$00 ;PRODOS/16 Operating system variables
Al	DS \$5B,\$00 ;Pad to check sums
FC FE	DW \$0000 ;Main BATTERYRAM checksum DW \$0000 ;Secondary checksum

### What Happens When Control Panel is Activated and at Power Up

When the Control Panel is selected and the BATTERYRAM is corrupt the system will assume a U.S. layout and English language. The information is saved in the BATTERYRAM storage buffer in bank E1. Also occurring if the BATTERYRAM is corrupt is the moving of U.S. standard parameters to the BATTERYRAM storage buffer in bank E1. The information is checksummed and written to the BATTERYRAM. A read of the BATTERYRAM is now done. If the checksum fails the system continues running using U.S standard parameters.

Anytime the Control Panel program is selected the keyboard micro is instructed to give the firmware the identification numbers of all the keyboard layouts it supports. This information will be used later to determine which options should be displayed as user keyboard options. The keyboard micro will also pass identification numbers for the display languages which should be used for each keyboard layout. These numbers will also be used later to determine which options should be displayed as user language options.

### Special Entry/Set System Defaults

The control panel can be entered by holding down the Option key during power up or by pressing Control-Option-Reset. This entry will cause a preliminary screen to appear. This screen allows the user to do the following.

- 1 = Enter Control Panel.
- 2 = Set system standards and 60 hertz.
- 3 = Set system standards and 50 hertz.
- 4 = Continue restarting the system.

By pressing the appropriate key the described function will occur.

### Control Panel Parameter Screens

The attached screens were generated with a Macintosh using MacDraw.

# Option-Control-Reset Entry Screen

1=Enter Control Panel.

2=Set system standards and 60 hertz.

3=Set system standards and 50 hertz.

4=Continue restarting the system.

Press 1,2,3 or 4 to continue.

### Options for this screen:

- 1. Press 1 to enter the control panel.
- 2. Press 2 to set Apple standard system parameters with 60 hertz selected.
- 3. Press 3 to set Apple standard system parameters with 50 hertz selected.
- 4. Press 4 to enter normal startup sequence.

# Main Menu Screen

# Control Panel

Display
Sound
System Speed
Clock
Options
Slots
Printer Port
Modem Port
RAM Disk

5:10:45 PM 4/18/86

# Quit

Select: ↓↑

Open:

## Options for this screen:

Use arrow keys to select submenu.
Selections are inversed when chosen.
Escape at this level causes Quit to be inversed.
Return opens the submenu chosen.

# Display Screen

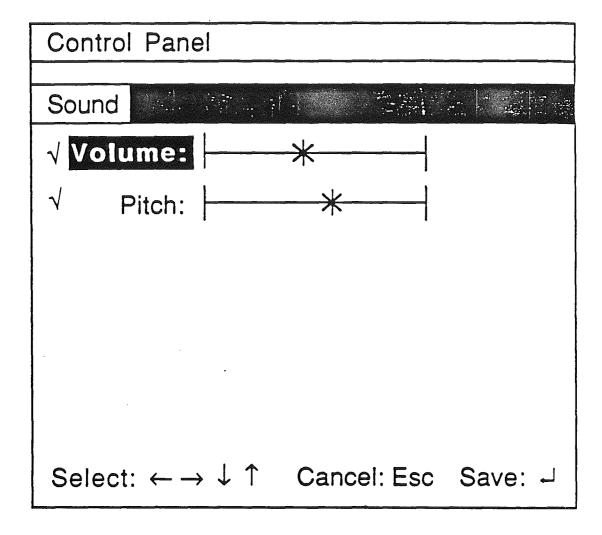
# Display ✓ Type: Color ✓ Columns: 40 -Screen Colors ✓ Text: White ✓ Background: Medium Blue ✓ Border: Medium Blue ✓ Standards: Yes -Hertz: 60 Select: ← → ↓ ↑ Cancel: Esc Save: ↓

### Options for this screen:

Use arrow keys to make selection.
Selections are inversed when chosen.
Escape at this level causes return to main menu.
Return saves the users choices on this screen.
The check mark indicates the default value.
Standards restores the standard colors.

'No' cannot be selected on Standards line.
Standards options change automatically as user changes text, backgound, and border colors.

# Sound Screen



Options for this screen:

Use arrow keys to make selection.

Selections are inversed when chosen.

Escape at this level causes return to main menu.

Return saves the users choices on this screen.

The check mark indicates the default value.

Each time the left or right arrows are pressed the bell routine is called so the user can hear the new volume and pitch chosen.

# System Speed Screen

Control Panel		
System Speed *		
√ System Speed:	Fast	
·		
Select: ← →	Cancel: Esc	Save: -

Options for this screen:

Use arrow keys to make selection.

System speed is always inversed.

Escape at this level causes return to main menu.

Return saves the users choices on this screen.

The check mark indicates the default value.

## Clock Screen

Clock

Month: 4

Day: 18
Year: 86
√ Format: MM/DD/YY

Clock

5:10:45 PM
4/18/86

Hour: 5 PM Minute: 10 Second: 02

√ Format: AM-PM

Select: ← → ↓ ↑ Cancel: Esc Save: ¬

### Options for this screen:

Use arrow keys to make selection.

Selections are inversed when chosen.

Escape at this level returns to main menu.

Formats change in clock display whenever the user changes them. They revert back to the previous setting is user presses Esc to cancel the last change.

Default arrows only available for Format options.

# Options Screen

Control Panel
Options Control of the Control of th
Very Language: U.S.A.  Very Keyboard Layout: U.S.A.  Very Keyboard Buffering: No  Very Repeat Speed:  Very Repeat Delay:  Very Cursor Flash:  Ver
Select: ← → ↓ ↑ Cancel: Esc Save: J

# Options for this screen:

Use arrow keys to make selection.

Selections are inversed when chosen.

Escape at this level causes return to main menu.

Return saves the users choices on this screen.

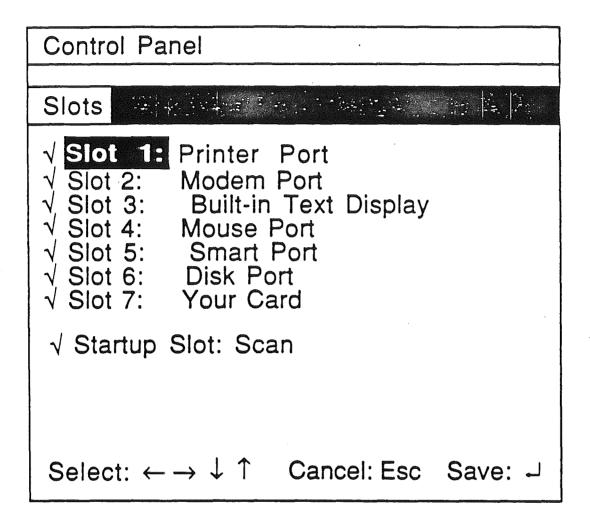
The check mark indicates the default value.

Stars slide back and forth on bars when selecting

Repeat Speed, Repeat Delay, Double Click and

Cursor Flash.

### Slots Screen



### Options for this screen:

Use arrow keys to make selection.

Selections are inversed when chosen.

Escape at this level causes return to main menu.

Return saves the users choices on this screen.

The check mark indicates the default value.

If Printer Port, Modem Port and Built-in

AppleTalk are selected at the same time
the message 'WARNING: Printer / Modem /

AppleTalk cannot be active at the same
time!!! ' appears. At that point the user must
change one of them to continue or press Esc.

### Printer Port Screen

Printer Port

Device Connected: Printer

↓ Line Length: Unlimited

↓ Delete first LF after CR: No

↓ Add LF after CR: Yes

↓ Echo: No

↓ Buffering: No

↓ Buffering: No

↓ Baud: 9600

↓ Data/Stop Bits: 8/1

↓ Parity: None

↓ DCD Handshake: Yes

↓ DSR/DTR Handshake: Yes

↓ XON/XOFF Handshake: No

Select: ← → ↓ ↑ Cancel: Esc Save: ↓

### Options for this screen:

Use arrow keys to make selection.
Selections are inversed when chosen.
Escape at this level causes return to main menu.
Return saves the users choices on this screen.
The check mark indicates the default value.

### Modem Port Screen

Modem Port

✓ Device Connected: Modem

✓ Line Length: Unlimited

✓ Delete first LF after CR: No

✓ Add LF after CR: No

✓ Echo: No

✓ Buffering: No

✓ Baud: 1200

✓ Data/Stop Bits: 8/1

✓ Parity: None

✓ DCD Handshake: Yes

✓ DSR/DTR Handshake: Yes

✓ XON/XOFF Handshake: No

Select: ← → ↓ ↑ Cancel: Esc Save: J

## Options for this screen:

Use arrow keys to make selection.
Selections are inversed when chosen.
Escape at this level causes return to main menu.
Return saves the users choices on this screen.
The check mark indicates the default value.

# RAM Disk Screen

Control Panel	
RAM Disk	
√ Minimum RAM Disk Size: √ Maximum RAM Disk Size: -Largest Selectable:	0K 0K 1024K-
-RAM Status- RAM Disk Size: Total RAM in Use: Total Free RAM:	50K 85K 1194K
Select: ← → ↓ ↑ Cancel: Esc	Save: -

# Options for this screen:

Use arrow keys to make selection.
Selections are inversed when chosen.
Escape at this level causes return to main menu.
Return saves the users choices on this screen.
The check mark indicates the default value.