TANDY®

Technician Series
Diagnostics Software

VIDADAPT

Video Adapter Diagnostics

01-0220 Computer Technical Services

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VIDADAPT DIAGNOSTIC

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VIDADAPT DIAGNOSTIC

TABLE OF CONTENTS

GENERAL DESCRIPTION

The VIDADAPT (Video Adapter) diagnostic program allows simple verification of a video adapter display board's functions. By providing a menu driven method of selecting a specific mode, or stepping through all modes, the user is able to visually see if the adapter is functioning.

FEATURES

Wide range of video adapters and monitors supported.

The selection of the video adapter and monitor installed is simplified by allowing the selection of only those adapters compatible with the current video port (color/monochrome), as well as only those monitors compatible with the selected adapter.

Allows testing of all standard video modes as well as any special modes available for the specific video adapter selected.

Dual video system operation. Allows switching between a color and monochrome adapter.

EQUIPMENT REQUIRED

MS-DOS compatible computer. Video Adapter Display board.
Compatible Video Monitor.

LOADING VIDADAPT

The VIDADAPT program can be loaded either by selecting the appropriate menu selection on a Diagnostic Diskette or at the DOS prompt by typing:

vidadapt<ENTER>

OPERATING VIDADAPT

Once loaded, VIDADAPT will display the current video port, color or monochrome, along with all of the supported adapters but highlighting only those compatible with that port. Following this it will prompt for the selection of the Primary video adapter. Once the Primary adapter is selected it redisplays the adapters highlighting only those compatible with the other video port. The prompt then asks for the selection of the Secondary adapter.

With the video adapter, or adapters, selected, VIDADAPT displays all of the supported video monitors highlighting only those compatible with the Primary video adapter. If there was a Secondary adapter selected the monitors selection is redisplayed highlighting only those compatible with the Secondary adapter.

Once the adapters and monitors are selected the main screen is displayed.

MAIN DISPLAY DESCRIPTION

VIDADAPT main screen:

ACTIVE DISPLAY PORT Port: 03D4H Adapter: VGA Monitor: VGA-C	COLOR DISPLAY PORT Port: 03D4H Adapter: VGA Monitor: VGA-C	MONO DISPLAY PORT Port: 03B4H Adapter: None Monitor: None

ADAPTER STANDARD MODES	ADAPTER SPECIAL MODES
40 x 25 Text Grey 40 x 25 Text Color 80 x 25 Text Grey 80 x 25 Text Color 320 x 200 x 4 Color 320 x 200 x 4 Grey 640 x 200 x 2 Color 80 x 25 Text Mono	320 x 200 x 16 Color 640 x 200 x 16 Color 640 x 350 Monochrome 640 x 350 x 16 Color 640 x 480 x 16 Color 320 x 200 x 256 Color Split Screen Pixel Scroll & Pan ROM Character Sets Memory Test

F1:Select Standard Mode F3:Toggle Active Port ESC:Exit
F2:Select Special Mode F4:Change Adapter/Monitor Selection: _

The VIDADAPT main screen can be divided into six (6) sections:

Active Display Port	**Color Display Port**	**Mono Display Port**
Standard Modes	**Special Modes**	**Options**

Active Display Port: Displays the current video port, adapter and monitor being tested.

Color Display Port: Displays the selected adapter and monitor for the color port.

Mono Display Port: Displays the selected adapter and monitor for the monochrome port.

Standard Modes: Displays the standard video modes which may be tested for the active video adapter, highlighting the modes available for the current port, color or monochrome.

Special Modes: Displays the special video modes which may be tested for the active video adapter, highlighting the modes available for the current port, color or monochrome.

Options: Displays the currently available commands along with their associated keyboard entries.

COMMANDS

SELECT STANDARD MODE:

Pressing <F1>, Select Standard Mode, places the selection bar over the current mode within the Adapter Standard Mode section. By using the Up and Down arrow keys the selection bar will step between the modes available for testing. Pressing <ENTER> will select the video mode highlighted by the selection bar.

SELECT SPECIAL MODE:

Pressing <F2>, Select Special Mode, places the selection bar over the first compatible mode within the Adapter Special Mode section. By using the Up and Down arrow keys the selection bar will step between the modes available for testing. Pressing <ENTER> will select the video mode highlighted by the selection bar.

TOGGLE ACTIVE PORT:

Pressing <F3>, Toggle Active Port, changes the current active display port (color or monochrome) to the other port (monochrome or color). If a secondary adapter was not selected the following error message will appear;

Port Inactive, Secondary Adapter Was Not Specified.

Pressing any key will clear the error message.

CHANGE ADAPTER/MONITOR:

Pressing <F4>, Change Adapter/Monitor, returns to the initial adapter selection screen. This allows selecting a new adapter/monitor combination.

EXIT:

Pressing <ESC> will exit VIDADAPT and return to the Diagnostics Diskette menu or the DOS prompt depending on how VIDADAPT was loaded.

TEST DESCRIPTIONS

STANDARD MODE TESTS

STANDARD MODE TESTS DISPLAY DESCRIPTION:

When a mode is selected from within the Adapter Standard Modes section, the Standard Mode Tests screen is displayed.

```
STANDARD MODE TESTS
                              Test Mode:  80 x 25 Text Color

                 Adapter Tests:       1.  Character Set
                                      2.  Character Attributes
                                      3.  Video Screen Pages
                                      4.  Border / Background Color

           Video Maintenance Aids:    5.  Color Palettes / Rotating Bits
                                      6.  Color Bars
              Tests 5-9 default       7.  Purity or Full Screen
              to Text mode.           8.  Dots / Crosshatch
                                      9.  Linearity & Focus

                              1-9:Select Test
ESC:Main Menu                                              Selection:
```

The Standard Mode Tests screen can be divided into four (4) sections:

Test Mode Adapter Tests Video Maintenance Aids Options

Test Mode: Displays the currently selected video mode.

Adapter Tests: Displays the standard mode tests available.

Video Maintenance Aids: Displays the functions available to aid with the alignment of the video monitor as well as troubleshooting the video output signals of the video adapter.

Options: Displays the currently available commands along with their associated keyboard entries.

CHARACTER SET:

This test fills the screen with the ASCII character set of the video adapter. It starts with the first display attribute and then repeats rotating through all available attributes.

Pressing <P> will pause the test leaving a full screen with the current attribute while <ESC> will exit and return to the Standard Mode Test screen.

CHARACTER ATTRIBUTES:

The Character Attributes test displays all of the available attribute combinations. Depending on the current video mode selected this test will respond in one of four ways:

Text 40 Column: In these modes the attribute combinations are displayed in three tables. Each table has the Background color listed across the top and the Foreground color down the left side. A sample of the resulting attribute is displayed where the Background (Column) and Foreground (Row) meet.

Text 80 Column: In these modes the attribute combinations are displayed in a table format. Across the top are the Background colors and down the left side are the Foreground colors. A sample of the resulting attribute is displayed where the Background (Column) and Foreground (Row) meet.

320 x 200 x 4: In the four color graphic modes the character attributes available are defined in two Palettes. A Palette consists of three Foreground colors and one Background color. While the Background color can be any of the standard sixteen colors the three Foreground colors are usually predefined. The Character Attributes test will display the first Palette and then cycle through all of the Background colors. It will then repeat the process for the second Palette.

640 x 200 x 2: In the two color graphic mode the attributes available consist of one Foreground color, one Background color, and on some display adapters a Border color is allowed. Normally the Foreground color can not be changed, however the Background and Border, if supported, can be any of the standard sixteen colors. The test will display a Background color, cycle through the Border colors and then repeat for the remainder of the Background colors. The one Foreground color is the color of the text on the screen.

NOTES: On the text attribute tables not all color combinations are visible. Black Foreground and Black Background, Blue Foreground and Blue Background are a few examples.

On the Grid 140XT, GDA, GMDA, and DGDA adapters in the 320 x 200 graphic modes the border characters will not be the standard double bar characters but some unrecognizable dot patterns. This is caused by the board's character set and should not be considered a problem.

On the 1000, 1400LT and GDA adapters in 320 x 200 gray mode the palette colors are not as listed and they do not change. The colors are always Cyan, Red, and White.

VIDEO SCREEN PAGES:

Standard text mode video memory consists of 16 Kilobytes. The amount of memory required to fill the entire screen is called a Page. The actual memory required for one Page will vary depending on the video mode. The Video Screen Pages test fills each page with the ASCII number representing that page. It will then display the first Page of memory which should fill the screen with the number 1. In the center of the screen will then be displayed how many Pages are available and which one is currently being displayed. Pressing any key will cause the next Page of memory to be displayed. The entire screen, except for the center description box, should be filled with the number of the current video Page.

BORDER / BACKGROUND COLOR:

The Border, or overscan, area of the screen is the area outside the normal display area. Some Display Adapters support the ability to change the normally black Border to any of the standard colors. The Border / Background Color test will display a Background color, cycle through the Border colors and then repeat for the remainder of the Background colors.

Because not all of the Display Adapters support a Border, and those that do may not support it in all video modes, there may be a special message displayed describing any limitations the current Display Adapter has within the current video mode.

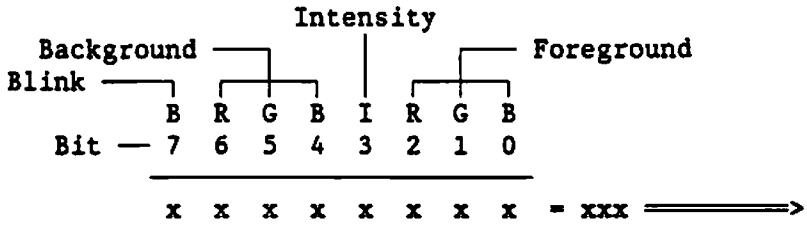
NOTES: 640x200x2 Mode - The Border / Background test starts with a black background. With the Tandy 1000 in this mode the text color is the background color. There will therefore be a short delay once the test is started before anything visible appears on the screen. This is normal operation.

Color/Grey Modes - With most color display adapters there will not be any noticeable difference between the Color and Grey video modes. The Grey modes simply disable the color burst to composite monitors. RGB monitors are not effected by the color burst signal.

COLOR PALETTES / ROTATING BITS:

The different colors of text are created by a special Attribute byte. Each bit of the byte signifies a single color or function which when combined with the others delivers the desired character Attribute. The Color Palettes / Rotating Bits test is used to display which of the bits within this Attribute byte are used to create the displayed color. This information is intended to aid in determining which, if any, of the video output signals is not reaching the monitor. Depending on the Display Adapter selected this test may respond in one of three ways:

CGA/Monochrome: The CGA attribute byte consists of one bit each for Red, Green and Blue Foreground, one bit each for Red, Green and Blue Background, plus one bit for High Intensity and one bit for Blinking. With this attribute byte configuration it is possible to display 16 colors, 8 in low intensity and 8 in high intensity.



The Monochrome attribute byte uses the same bit arrangement with a different meaning:

BACKGND					FOREGND				
B	R	G	B	I	R	G	B		RESULT
0	0	0	0	0	0	0	0	=	Black Character on Black
0	0	0	0	0	0	0	1	=	Underline
0	0	0	0	0	1	1	1	=	White Character on Black
0	0	0	0	1	1	1	1	=	Bright White on Black
1	0	0	0	0	1	1	1	=	Blinking White on Black
1	0	0	0	1	1	1	1	=	Blinking Bright White on Black
0	1	1	1	0	0	0	0	=	Black Character on White
1	1	1	1	0	0	0	0	=	Blinking Black on White

NOTE: All other combinations are undefined and may vary between Display Adapters.

The right side of the display will fill with eight blocks with each block displaying a different attribute. On the left side will be displayed the RGB bit pattern including the Blink and Intensity bits. The arrow is pointing to the attribute block currently being displayed in binary and decimal format.

The Attribute blocks will start incrementing in value so as to display all the possible combinations, 0 through 255. Pressing **<SPACE>** will stop the rotation leaving the current attribute block's binary value displayed. Pressing **<SPACE>** again allows single stepping through the Attributes while pressing **<ENTER>** will start the auto stepping again. Pressing **<ESC>** will exit the test.

EGA: The EGA attribute byte consists of two bits each for Red, Green and Blue. With this attribute byte configuration it is possible to display 64 colors.

With the EGA Display Adapter this test first displays a block of the three possible combinations of the two Red, Green and Blue signals. The display should show three shades of Red, three of Green and three of Blue.

Pressing any key continues to the next phase of the test which displays the same three shades of each again only filling the screen one at a time. Pressing any key advances to the next color.

With the full screens finished the third and final phase of the test starts. This test is very similar to the CGA/Monochrome Rotating bits with the exception of the colors and bit patterns being displayed.

The Attribute blocks will start incrementing in value so as to display all the possible combinations, 0 through 64 (displayed in binary and hex). Pressing **<SPACE>** will stop the rotation leaving the current attribute block's binary value displayed. Pressing **<SPACE>** again allows single stepping through the Attributes while pressing **<ENTER>** will start the auto stepping again. Pressing **<ESC>** will exit the test.

VGA: The VGA Attribute consists of three bytes, one byte for the Red, Green and Blue colors. Each byte may contain a value from 0 to 63. As the value of a color increases the level of the color increases. As an example a value of 0 for the Red byte would result in no trace of Red color. A value of 30 would produce a medium shade of Red where a value of 63 would produce a

bright Red. With the three Attribute bytes in combination it is possible to display 256 colors.

With the VGA Display Adapter this test first displays four blocks, Red alone, Green alone, Blue alone and finally Red, Green and Blue combined (White). Each block will contain all the possible shades of the specified color.

Pressing any key continues to the next phase of the test. At this point the test allows the user to increase or decrease each of the three attribute bytes. As this is being done the Decimal and Binary values of each byte are displayed.

Pressing <1> increases the Red attribute value.
Pressing <2> decreases the Red attribute value.

Pressing <3> increases the Green attribute value.
Pressing <4> decreases the Green attribute value.

Pressing <5> increases the Blue attribute value.
Pressing <6> decreases the Blue attribute value.

Pressing <ESC> exits the test.

COLOR BARS:

The Color Bars test will display 16 vertical color bars on color adapters and 3 vertical bars on monochrome adapters, one for each of the standard colors on that type of adapter. Using the left or right arrow keys the bars may be rotated left or right respectively. This test is used to aid in the alignment of the video monitor.

PURITY OR FULL SCREEN:

This test is used to aid in the purity alignment of the video monitor. It will fill the screen with one color at a time. Pressing any key will step to the next color causing it to rotate through all of the standard colors. Pressing <ESC> will exit the test.

Correct purity is reached when all screens are only the color specified. There should not be any color changes around the edges of the screen.

NOTE: If you are using an EGA adapter see the 25-4037 note on the following page.

DOTS / CROSSHATCH:

This test is used to aid in the convergence alignment of the video monitor. It will fill the screen with several rows of white dots. Pressing any key will toggle the display of dots to a crosshatch display using lines. Pressing <ESC> will exit the test.

Correct convergence is accomplished when all of the dots and lines are white, or without any color visible around the edges.

NOTE: The right most column defined by the dots or lines is narrower than the other columns on the display. A message to this effect is displayed in that column.

If you are using an EGA adapter see the 25-4037 note on this page.

LINEARITY & FOCUS:

This test is used to aid in the linearity and focus adjustments of the video monitor. It will display a box in each corner and the center of the screen along with a group of 'H's between the boxes. Pressing any key will exit the test.

Correct linearity is accomplished when all of the boxes and characters are the same size vertically and horizontally. Correct focus is reached when all of the characters are clear and sharp.

25-3048 **NOTE:** With the 25-4037 EGA adapter and an EGM-1 monitor there is an additional option of switching the adapter between EGA and CGA mode within the Purity, Dots / Crosshatch and Linearity & Focus tests. This allows adjustment of the monitor in both modes while displaying the same screen. However to accomplish this the adapter must be jumpered as if it was attached to a CGA monitor. As noted on the screen in these tests, pressing <F1> will toggle between CGA and EGA modes.

SPECIAL MODE TESTS

TEXT MODES:

All of the special text modes perform basically the same way. Each will fill the screen with the ASCII character set using the specified number of rows and columns. Exiting the test will change depending on adapter type:

Monochrome and EGA: The Monochrome and EGA adapters will only display the text in white characters. Pressing any key will exit the test.

Color: The color modes will display the character set using a different attribute for each screen full. Pressing <P> will pause the test with a full screen using the current attribute while pressing <ESC> will exit.

GRAPHIC MODES:

All of the special graphic modes perform the same way. A horizontal bar is drawn across the top and a vertical bar down the left. Axis marks are placed on both bars 50 dot columns apart. In the center of the screen a color bar will be drawn. The number of colors within this bar will vary depending on the video mode. Pressing any key will exit the test unless the current video mode uses palettes. In this case pressing a key the first time will cause the display to switch palettes. Then pressing a key the second time will exit the test.

NOTE: VGA 640x480x16 - The axis mark message is normally displayed above the color bar. However, due to the memory arrangement of the VGA in the 640x480x16 mode this message will overlap the color bar slightly.

MEMORY TESTS:

When a memory test is selected the Video Memory Tests option screen is displayed:

```
VIDEO MEMORY TESTS                          Adapter's Memory Size: 256K

 Test Pattern: Checkerboard      Test Mode: Single      Errors: 00000


        Test Options:     1.  Test Adapter Memory

                          2.  Toggle Test Pattern
                          3.  Toggle Test Mode


                              1-3:Select Test
ESC:Main Menu                                                Selection:
```

Every display adapter has a memory test option. However, not all adapters have the memory they use located on the adapter's board. Those that don't have their own memory share the system's memory located on the main logic board. VIDADAPT knows how much memory each adapter uses and displays that amount as Adapter's Memory Size.

The default Test Pattern, Test Mode and the Error count of the last test are then displayed as well as the current options.

Test Adapter Memory: This option uses the current Test Pattern, Test Mode and Memory Size, displays the memory test screen and begins testing.

Toggle Test Pattern: There are two test patterns that can be used on each adapter. For CGA and Monochrome modes they are Checkerboard and All Bits On/Off. For EGA and VGA the patterns are Checkerboard and Modified Address. This option allows the selection of the desired pattern.

Toggle Test Mode: Testing can be done with a single pass or continuously. This option allows the selection of single or continuous testing.

Errors: Displays the error count from the previous test.

Exit: Pressing **<ESC>** exits the memory test and returns to the main menu.

MEMORY TEST DISPLAY DESCRIPTION:

TEST CONFIGURATION	TEST STATUS
TEST PATTERN: **Checkerboard**	TESTING: **Page 1, Plane 0**
TEST MODE: **Single**	PASS: **00001**
MEMORY SIZE: **256K**	ERROR COUNT: **00000**

*** ERROR LOG ***				
SEGMENT : OFFSET	WRITTEN	READ	(MSB) BAD BIT (LSB)	PASS

P:Pause Test ESC:Option Menu

The Memory Test screen can be divided into four (4) sections:

TEST CONFIGURATION TEST STATUS ERROR LOG OPTIONS

Test Configuration: This box displays the Test Pattern, Test Mode and Memory Size configuration currently being used.

Test Status: This area displays the current memory location being tested as well as the current pass and error count. The current location being tested is normally displayed in the **Segment:Offset** format. The three exceptions are the EGA, VGA and GMDA adapters.

The EGA and VGA adapters have 256K of memory however only 64K is mapped into the system at any one time. The current location is displayed as **Page x, Plane x**. The 256K of memory is arranged into 2 pages of 4 planes per page. Each plane consists of 32K, so with 8 planes the total memory comes to 256K. At any given time only two planes are addressed into the system memory, one plane for Page 0 and one for Page 1, for a total of 64K.

The GMDA display adapter has 128K of memory with only 64K mapped into the system at any one time. The current location is displayed as **Segment:Offset Bank x**. The 128K of memory is arranged into 2 Banks of 64K. The test will start at address A000:0000 and go to A000:FFFF testing Bank 0. It will then repeat the same address range but test Bank 1.

Error Log: When a memory error occurs this area displays the information relative to the error.

- Location - Address of error occurred displayed in the format described above.
- Written - Test pattern written to location displayed in hex.
- Read - Pattern read back from location displayed in hex.
- Bad Bit - Differences between pattern written and read displayed in binary. An 'X' indicates a bit that was different between the word read and written. The bits are read right to left (bit 0 is on the right).
- Pass - Pass the error occurred.

Options: Displays the currently available commands.

EGA/VGA ROM CHARACTER SETS:

The EGA and VGA display adapters have two (2) character sets in ROM. The EGA's sets use an 8x8 and 8x14 matrix whereas the VGA uses a 8x8 and 8x16 matrix. This test displays both to confirm the ROM character sets are operational.

VGA SPLIT SCREEN:

The VGA display adapter contains internal registers which allow the division of the display buffer. This test confirms the operation of these registers by displaying the first half of the buffer and then moving the second half up and back down the first.

VGA PIXEL SCROLL & PAN:

The VGA display adapter contains internal registers which allow shifting, vertically and horizontally, the display buffer in one pixel increments. This test confirms the operation of these registers by shifting vertically (scroll) and horizontally (pan) a section of the display. If they are working correctly the effect should be a fairly smooth movement of the display.

APPENDIX

VIDADAPT SUPPORTED VIDEO ADAPTERS

CATALOG NUMBER	DESCRIPTION	ABBR.
25-3040	Monochrome Display Adapter	MDA
25-3043	Graphics Display Adapter	GDA
25-3044	Graphics Master Display Adapter	GMDA
25-3045, 25-3045A	Dual Display Graphics Adapter	DDGA
25-3046, 25-3046B 25-3046C	Deluxe Text Display Adapter	DTDA
25-3047	Deluxe Graphics Display Adapter	DGDA
25-3048, 25-4037	Enhanced Graphics Adapter	EGA
25-1000, 25-1050 25-1051, 25-1600 25-1053, 25-1401 25-1601	Tandy 1000 Series	1000
25-6000, 25-4043	Video Graphics Array Adapter	VGA
25-3500, 25-3501 25-3505	Tandy 1400LT	1400
25-3049	Monochrome Graphics Adapter w/Parallel	MGAP

VIDADAPT SUPPORTED MONITORS

CATALOG NUMBER	DESCRIPTION	ABBR.
26-5111	VM-1 400 Line Monochrome	VM-1
26-3211, 25-1020	VM-2, VM-4 Composite	COMP
25-3010, 25-3011 25-3012	VM-3, VM-5 Monochrome	MONO
26-5112	CM-1 400 Line Color	CM-1
26-3232, 25-1021 25-1023, 25-1023A 25-1023B 25-1023C 25-1022, 25-1024 25-1043, 25-1043A	CM-2, CM-4, CM-5, CM-10, CM-11 Color	COLOR
25-4035, 25-4035A	EGM-1 Enhanced Graphics	EGM-1
25-4040	VGM-100 Monochrome	VGA-M
25-4041, 25-4042	VGM-200, VGM-300 Color	VGA-C
25-3500, 25-3501 25-3505	Liquid Crystal Display	LCD

DISPLAY ADAPTER AND MONITOR COMPATIBILITY

MONITOR	MDA	GDA	GMDA	DDGA	DTDA	DGDA	EGA	1000	VGA	1400	MGAP
VM-1					X	X	X [1]				
Comp		X	X	X				X			
Mono	X	X	X	X			X	X			X
CM-1					X	X	X [1]				
Color		X	X	X			X	X		X	
EGM-1							X				
VGA-M									X		
VGA-C									X		
LCD										X	

1 - The VM-1 and CM-1 are only compatible with the 25-4037 EGA adapter.

VIDEO ADAPTER STANDARD MODES

STANDARD MODE	MDA	GDA	GMDA	DDGA	DTDA	DGDA	EGA	1000	VGA	1400	MGAP
40 x 25 Text Grey		C	C	C		C/M	C/M	C	C	C	
40 x 25 Text Color		C	C	C		C/M	C/M	C	C	C	
80 x 25 Text Grey		C	C	C		C/M	C/M	C	C	C	
80 x 25 Text Color		C	C	C		C/M	C/M	C	C	C	
320 x 200 x 4 Color		C	C	C		C/M	C/M	C	C	C	
320 x 200 x 4 Grey		C	C	C		C/M	C/M	C	C	C	
640 x 200 x 2 Color		C	C	C		C/M	C/M	C	C	C	
80 x 25 Text Mono	M		M	M	M	C/M	M	M	M		M

C = Supported In Color Mode Only C/M = Supported In Both Color & Mono
M = Supported In Monochrome Mode Only Blank = Not Supported

VIDEO ADAPTER SPECIAL MODES

VIDEO ADAPTER	SPECIAL MODE	COLOR	MONO
MDA - Monochrome Display Adapter	Memory Test		X
GDA - Graphics Display Adapter	Memory Test	X	
GMDA - Graphics Master Display Adapter	40 x 16 Text Color	X	
	40 x 43 Text Mono		X
	80 x 16 Text Color	X	
	80 x 43 Text Mono		X
	320 x 200 x 16 Color	X	
	640 x 200 x 16 Color	X	
	640 x 704 Mono		X
	720 x 200 x 4 Color	X	
	720 x 704 Mono		X
	Memory Test	X	X
DDGA - Dual Display Graphics Adapter	132 x 25 Text Mono		X
	132 x 44 Text Mono		X
	320 x 200 x 16 Color	X	
	640 x 200 x 4 Color	X	
	640 x 200 x 16 Color	X	
	Memory Test	X	X
DTDA - Deluxe Text Display Adapter	Memory Test		X

VIDEO ADAPTER SPECIAL MODES (cont.)

VIDEO ADAPTER	SPECIAL MODE	COLOR	MONO
DGDA - Deluxe Graphics Display Adapter	80 x 50 Text Color	X	
	320 x 200 x 16 Color	X	
	320 x 400 x 16 Color	X	
	640 x 200 x 4 Color	X	
	640 x 400 x 2 Mono		X
	640 x 400 x 4 Color	X	
	Memory Test	X	X
EGA - Enhanced Graphics Adapter	80 x 43 Text Mono		X
	320 x 200 x 16 Color	X	
	640 x 200 x 16 Color	X	
	640 x 350 Monochrome		X
	640 x 350 x 16 Color	X	
	ROM Character Sets	X	X
	Memory Test	X	X
1000 - Tandy 1000 Series (Built In)	160 x 200 x 16 Color	X	
	320 x 200 x 16 Color	X	
	640 x 200 x 4 Color	X	
	Memory Test	X	X
VGA - Video Graphics Array Adapter	320 x 200 x 16 Color	X	
	640 x 200 x 16 Color	X	
	640 x 350 Monochrome		X
	640 x 350 x 16 Color	X	
	640 x 480 x 16 Color	X	
	320 x 200 x 256 Color	X	
	Split Screen	X	X
	Pixel Scroll & Pan	X	X
	ROM Character Sets	X	X
	Memory Test	X	X
1400 - Tandy 1400LT / Grid 140XT	Memory Test	X	
MGAP - Monochrome Graphics Adapter With Parallel Port	720 x 348 Monochrome		X
	Memory Test		X

ERROR MESSAGES:

Selected Adapter Is NOT Compatible With Video Port.

This message appears during the display adapter selection if the adapter is not supported on the current video port.

Selected Monitor Is NOT Compatible With Selected Adapter.

This message appears during the monitor selection if the monitor is not supported with the current display adapter.

Port Inactive, Secondary Adapter Was Not Specified.

This message appears during the Toggle Active Port command if there was no secondary port selected.

This Mode Requires The Enhanced Graphics Monitor (EGM-1)

This message appears if an enhanced EGA mode is selected and the current monitor is not the EGM-1.

The Adapter Must Be In EGA Mode Using The CM-1 Or EGM-1

This message appears if an enhanced EGA mode is selected and the current monitor is not the CM-1 or EGM-1.

SERVICE POLICY

Radio Shack's nationwide network of service facilities provides quick, convenient, and reliable repair services for all of its computer products, in most instances. Warranty service will be performed in accordance with Radio Shack's Limited Warranty. Non-warranty service will be provided at reasonable parts and labor costs.

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