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User's Guide

Compaq TFT500 Flat Panel Monitor

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Compaq Computer Corporation

book 1

ENGLISH

Introduction

The Compaq TFT500 Flat Panel Monitor has a 15.1-inch (38.35 cm) flat panel screen with an active matrix, thin-film transistor (TFT) liquid crystal display (LCD). It supports resolutions up to 1024×768 , and has a wide viewing angle of +/- 60 degrees horizontal and +/- 40 degrees vertical.

The overall size of the monitor is designed for use in small working areas or for those who need more working space on the desk.



Product Features

The monitor features include the following:

- 15.1-inch (38.35 cm) viewable area display
- Screen customizing adjustments displayed on-screen in five different languages: English, Dutch, French, German, and Spanish
- Universal Serial Bus Hub interface—plug and play connectors for use with USB peripherals (mouse, etc.)
- Plug and play capability if supported by your system
- Fault Management and Asset Control
- Desk arm mount (optional)
- Automatic scanning with screen expansion
- 1024 × 768 (XGA) resolution
- Wide viewing angle to allow viewing from a sitting or standing position, or moving side-to-side
- Energy Saver feature
- Compliant with the following regulated specifications:
 - Swedish MPR II 1990
 - EPA Energy Star
 - European Union CE Directives
 - Swedish TCO 1995

Setting Up the Monitor

To set up the monitor, ensure that the power is turned off to the monitor, computer system, and other attached devices, then follow these steps:

1. Place the monitor in a convenient, well-ventilated location near your computer.
2. Connect the monitor signal cable **1** to the 15-pin connector on the rear panel of the computer and tighten the screws.

- ✎ Be sure the signal cable aligns with the 15-pin connector. Do not force the cable onto the connector or you may damage the signal cable.



3. Plug the monitor power cord ② into the base of the monitor, and then into an electrical outlet ③ that is easily accessible and close to the monitor.



WARNING: To reduce the risk of electric shock or damage to your equipment, do not disable the power cord grounding feature. This equipment is designed to be connected to a grounded (earthed) power outlet that is easily accessible to the operator. The grounding plug is an important safety feature.



CAUTION: Be sure that the power outlet you plug your power cord into is easily accessible and located as close to the equipment operator as possible. When you need to disconnect power to the equipment, be sure to unplug the power cord from the power outlet.



The base of the monitor also has four Universal Serial Bus (USB) connectors. Three of these connectors, ❶, ❷, and ❸, are for connecting USB compatible plug and play devices such as a keyboard, mouse, or video camera. USB connector ❹ is used to connect the USB signal cable to the computer.



Mounting the Display on a Swing Arm

A swing arm mount with tilt and rotation capability can be purchased separately to use with this monitor. Refer to your authorized Compaq dealer or reseller for more information on this.

Operating the Monitor



Front Control Panel

No./Icon	Control	Function
① 	Select button	1. Launches on-screen display. 2. Selects function adjustments. 3. Exits menus and on-screen display.
② -	Minus button	Selects and adjusts the functions.
③ +	Plus button	Selects and adjusts the functions.
④ 	Power switch	Turns the monitor on and off.
⑤	Power LED	1. Green indicates monitor is turned on. 2. Yellow indicates suspend mode. 3. Amber indicates sleep mode.

On-Screen Display Settings

The adjustments for screen settings are located in the on-screen display and can be viewed in one of five available languages. The on-screen Main Menu displays the following nine functions:

Brightness	Adjusts the brightness of the screen's backlights.
Contrast	Adjusts screen contrast.
Position	Adjusts the horizontal and vertical position of the screen.
Color	Adjusts screen color balance.
Digital Conversion	Adjusts the clock and clock phase.
Language	Lists five languages available to display on-screen menus.
Management	Turns full screen, power saver, and display modes on and off, and displays monitor serial number.
Factory Reset	Resets the screen to its factory settings.
Exit	Turns off the on-screen menu.

How to Adjust Settings

To launch the on-screen display Main Menu:

1. Press the *Select* button ❶ on the monitor front panel. The Main Menu will display on the monitor screen.
2. To select an item from the Main Menu, scroll down by pressing the *Minus* (-) button ❷ located on the monitor front panel. To reverse or back up, press the *Plus* (+) button ❸.
3. Highlight your choice and press the *Select* button ❶ again.

For example, to select the Position menu, press the *Minus* button ❷ until Size and Position is highlighted, then press the *Select* button ❶ to choose it.



Monitor with On-Screen Display

4. A second level menu displays with expanded menu items. Again, to make a selection, press the *Minus* (-) button ❷ to scroll down or press the *Plus* (+) button ❸ to reverse or back up.
5. Highlight your choice, then select *Save and Return*. To void any changes made, select *Cancel* instead of *Save and Return*.
- ✎ The second level menu for Brightness and Contrast displays an adjustment screen. Use the *Minus* button to decrease and the *Plus* button to increase the screen brightness and contrast.
6. Adjust the third level menu displays in the same manner.
7. To exit from the on-screen menu, select *Exit* from the Main Menu. If the display is a second or third level menu, select *Save and Return* or *Cancel*, then select *Exit* from the Main Menu.

The on-screen display is easy to use, just follow the instructions on the screen.

Language Selection

When the monitor is turned on for the first time, the on-screen display is set to the English language. However, the display can be set to any one of these languages: English, Dutch, French, German, or Spanish.

To change the display to the language of your choice:

1. Launch the on-screen display by pressing the *Select* button ❶ on the monitor front panel.
2. Move through the list of functions on the on-screen display by pressing the *Minus* (-) button ❷ repeatedly until the word *Language* is highlighted on the screen. To reverse or back up through the function list, press the *Plus* (+) button ❸.
3. When *Language* is highlighted, press the *Select* button ❶ to confirm the selection.



Selecting Language on the On-Screen Display

4. From the next screen, press the *Minus* button ❷ to choose a language.

5. After the language of your choice is highlighted and selected, press *Save and Return* to confirm the selection, and the Language Menu will escape to the Main Menu.

✎ Selecting *Cancel* redisplay the second level Language menu again in the original language.

6. Within the Main Menu, select *Exit* to turn off the on-screen display. From this point, all on-screen functions will display in your chosen language.

Display Resolutions

The display resolutions listed below are the most commonly used modes and are set as factory defaults. This monitor automatically recognizes these preset modes when they are requested by a software program and will provide the user with a properly sized and centered display.

Display Resolutions	
Memory Channels	Resolutions
1. Industry Standard	640 × 350 at 31.5 kHz/70 Hz
2. Industry Standard	640 × 480 at 31.5 kHz/60 Hz
3. VESA	640 × 480 at 37.5 kHz/75 Hz
4. VESA	640 × 480 at 43.3 kHz/85 Hz
5. Industry Standard	720 × 400 at 31.5 kHz/70 Hz
6. VESA	800 × 600 at 37.8 kHz/60 Hz
7. VESA	800 × 600 at 46.9 kHz/75 Hz
8. VESA *(P)	800 × 600 at 53.7 kHz/85 Hz
9. Macintosh	832 × 764 at 49.7 kHz/75 Hz
10. VESA	1024 × 768 at 48.4 kHz/60 Hz
11. VESA	1024 × 768 at 56.5 kHz/70 Hz
12. VESA	1024 × 768 at 60 kHz/75 Hz

* (P) = Proposed

User Modes

The video controller signal may occasionally call for a mode that is not preset if:

- You are not using a Compaq standard graphics adapter.
- You are not using a preset mode.

If this occurs, you may need to readjust the parameters of the monitor screen by using the on-screen display. User changes can be made to any or all of these modes and saved in memory. The monitor automatically stores the new setting, then automatically recognizes the new mode just as it does a preset mode. In addition to the 12 preset modes that can be changed and stored, there are 4 user modes that can be entered and stored.

To revert back to the factory default settings, select *Reset* from the *Factory Reset* menu in the on-screen display, and the factory default resolutions will replace the user changes made for the operating original display mode.

Energy Saver Feature

The energy saver feature has three different modes of operation:

- Full power mode
- Suspend mode
- Sleep mode

By selecting settings in the computer's Energy Saver utility, you are able to determine the length of the inactivity period before the monitor goes into suspend or sleep mode.

The following table describes the monitor energy saver levels available during the different modes of operation.

Energy Saver Levels*		
Mode	Power Usage	Description
Full Power	Less than 40 watts	ON = Normal operation Power LED is green.
Suspend	Less than 10 watts	Monitor screen is blanked. Backlights are turned off. Power LED turns yellow. Full power mode returns quickly.
Sleep	Less than 5 watts	Monitor screen is blanked. Backlights are turned off. Power LED turns amber. There is a brief warm-up period before returning to full power mode.

*The energy saver levels listed are for the monitor only and do not include any USB devices connected to the USB ports. For information on specific USB power levels, refer to the reference manual that comes with the USB device.

Refer to your computer manual for instructions on setting energy saver features (sometimes referred to as power management features).

- ✎ The energy saver features for monitors only work when connected to computers that have energy saver features.

Care and Maintenance

This section explains how to care for and maintain your Compaq monitor during normal everyday use.

Protecting the Monitor

To protect your monitor from overheating and other types of damage, follow these suggestions:

- Use only a power source and connection appropriate for this monitor, as indicated on the marking label/back plate.
- When you connect the monitor to an outlet or extension cord, be sure the total ampere rating of the products connected to the outlet does not exceed the current rating of the electrical outlet, and the total ampere rating of the products connected to the cord does not exceed the rating of the cord.
- Install the monitor near an outlet that you can easily reach. Disconnect the product by grasping the plug firmly and pulling it from the outlet. Never disconnect it by pulling the cord.
- Unplug the monitor from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners.
- Slots and openings in the cabinet are provided for ventilation. These openings must not be blocked or covered. Never push objects of any kind into cabinet slots or other openings.
- Do not place plants on top of the monitor. Water or dirt from the plant may fall into the vents.
- Do not drop the monitor or place it on an unstable surface.
- Do not allow anything to rest on the power cord. Do not walk on the cord.

- Keep the monitor in a well-ventilated area, away from excessive light, heat, and moisture. Keep the monitor away from high capacity transformers, electric motors, and other strong magnetic fields.
- Do not open the monitor cabinet or attempt to service this product yourself. Adjust only those controls that are covered by the operating instructions. If the monitor is not operating properly or has been dropped or damaged, contact your Compaq authorized dealer, reseller, or service provider.

Cleaning the Monitor

To clean the monitor, follow these steps:

1. Turn off the monitor and the computer.
2. Dust the monitor by wiping the screen and the cabinet with a soft, clean cloth.

If the screen requires additional cleaning, use any antistatic CRT screen cleaner.



CAUTION: Do not use benzene, thinner, or any volatile substances to clean the monitor. These chemicals may damage the cabinet finish. Never use water to clean an LCD screen.

Shipping the Monitor

Keep the original packing box in a storage area. You may need it later if you move or ship your monitor.

Adjusting Picture Quality

Allow the monitor to warm up for 30 minutes before performing the following procedures. The picture image stabilizes after a warm-up period.

While adjusting the picture quality, some software programs may display color bars on the monitor screen. This is a result of the software modifying the available colors. The monitor will return to normal operation when the display changes.


Optimizing Contrast

For best results, set your screen to a light background (such as the Windows Desktop) before adjusting the following settings:

1. Set the brightness control to its maximum setting.
2. Adjust the contrast setting until all colors are set to your preference.

Optimizing Digital Conversion

The Compaq TFT500 monitor contains advanced circuitry that allows the flat panel screen to function like a standard monitor. Two controls in the on-screen display can be adjusted to improve image performance or digital conversion: Clock and Clock Phase. Increasing the Clock value will increase the horizontal size of the image, and adjusting Clock Phase will focus the display.

 Selecting some values of Clock and Clock Phase may cause the monitor to lose sync with the computer. If this occurs, continue adjusting the values until sync is regained. To restore the factory settings, select *Reset* from the *Factory Reset* menu in the on-screen display.

appendix A

AGENCY REGULATORY NOTICES

Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Compaq Computer Corporation may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

Declaration of Conformity for Products Marked with FCC Logo, United States Only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding this declaration, contact:

Compaq Computer Corporation
P.O. Box 692000, Mail Stop 510101
Houston, Texas 77269-2000

Or call: (281) 514-3333

To identify this product, refer to the Series/model number found on the product.

Canadian Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Avis Canadien

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

German Ergonomics Notice

Compaq Computers, when tested with the Compaq 640 Series monitors, were evaluated and found compliant to the requirements of ZH 1/618 (German Safety Regulations for Display Work Places in the Office Sector) in the Text Mode (720 × 400) using MS-DOS Version 3.31 (or higher) and BASICA as published by Compaq Computer Corporation.

EPA Energy Star Compliance

Monitors that are marked with the Energy Star Logo meet the requirements of the EPA Energy Star program. As an Energy Star Partner, Compaq Computer Corporation has determined that this product meets the Energy Star guidelines for energy efficiency. Specific details on using the Energy Saving features can be found in the energy saver or power management section of the computer manual.

European Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European norms:

- EN55022 (CISPR 22) - Radio Frequency Interference
- EN50082-1 (IEC801-2, IEC801-3, IEC801-4) - Electromagnetic Immunity
- EN60950 (IEC950) - Product Safety


Japanese Notice

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SPECIFICATIONS

Compaq TFT500 Flat Panel Monitor		
Display	15.1-in	38.35 cm
Type	Flat panel, Active matrix-TFT LCD	
Viewable Image Size	15.1-in diagonal	38.35 cm
Face Treatment	Transparent protector with antireflective coating	
Weight (Unpacked)	20 lb	9.06 kg
Maximum Dimensions		
Height	17.2 in	43.7 cm
Depth	9.15 in	23.25 cm
Width	15.15 in	38.5 cm
Maximum Graphics Resolution		
	1024 X 768 at 75 Hz Refresh Rate	
Text Mode	720 X 400	
Dot Pitch	0.3 mm	
Horizontal Frequency	31.5 to 60 kHz	
Vertical Frequency	56.3 to 85 Hz	
Environmental Requirements Temperature		
Operating Temperature	41 to 95°F	5 to 35°C
Storage Temperature	-43 to 140°F	-20 to 60°C
Humidity (Non-Condensing)		
Operating	20 to 80%	
Non-Operating	5 to 95%	
Power Source	120 VAC 60 Hz or 220 VAC, 50 Hz, < 80 watts	
Power Consumption	< 40 watts	
Input Terminal	15-pin D-type connector with cable	

Connector Pin Assignments

Signal Cable		
Connector	Pin	Signal
	1	Red Video
	2	Green Video/Sync on green
	3	Blue Video
	4	Open
	5	Return
	6	Red Gnd
	7	Green Gnd
	8	Blue Gnd
	9	Reserved (No Pin)
	10	Sync Return
	11	Open
	12*	Bidirectional Data (SDA)
	13	H-Sync/Composite Sync
	14	V-Sync
	15*	Data Clock (SCL)

* DDC Signals

Color Display Values

CIE* Chromaticity Coordinates		
	x (+/- 0.030)	y (+/- 0.030)
Red	0.60	0.36
Blue	0.15	0.08
Green	0.30	0.60
White Point (6500 K)	0.31	0.32
Gamma: 2.25		

*Commission International d'Eclairage, 1931 Standard.

Power Cord Set Requirements

The monitor power supply is provided with Automatic Line Switching (ALS). This feature allows the monitor to operate on input voltages between 100-120V or 220-240V.

The power cord set (flexible cord or wall plug) received with the monitor meets the requirements for use in the country where you purchased the equipment.

Power cord sets must meet the requirements of the country where you use the monitor. For more information on power cord set requirements, contact your Compaq authorized dealer, reseller or service provider.

General Requirements

The requirements listed below are applicable to all countries:

1. The length of the power cord set must be at least 5.00 feet (1.5 m) and a maximum of 9.75 feet (3.0 m).
2. All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
3. The power cord set must have a minimum current capacity of 10A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system.
4. The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector, for mating with appliance inlet on the rear of the unit.

Country-Specific Requirements

Power Cord Set Requirements: By Country		
Country	Accredited Agency	Applicable Note Numbers
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	JIS	3
The Netherlands	KEMA	1
Norway	NEMKO	1
Sweden	SEMKO	1
Switzerland	SEV	1
United Kingdom	BSI	1
United States	UL	2

Notes:

1. The flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 1.0 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.
2. The flexible cord must be Type SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15A, 125V) or NEMA 6-15P (15A 250V) configuration.
3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 0.75mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (15A, 125V) configuration.

