HP D2828A

HP52

15-inch Color Monitor
13.8-inch Viewable Image
User's Guide

Moniteur couleur 15 pouces
Affichage 13,8 pouces
Guide de l'utilisateur

0.28 mm dot pitch for
excellent graphics

Non-glare, anti-static, screen
coating

Full scan screen that gives
an edge to edge image

On/Off switch

Controls for brightness, contrast, image
position, and image geometry.

Status indicator

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User's Guide

Important Safety Instructions

Before you plug in your new monitor, read these important safety instructions.

WARNING   Connect the monitor only to a grounded power outlet. Use the power cord supplied with the monitor or one with a properly grounded plug. Ensure the cable meets your country's standards for safety.

To completely disconnect power from the monitor, remove the power cord from the power outlet. Ensure that the power outlet is easily accessible.

To avoid electric shock. do not remove the cover or back. There are no user serviceable parts inside.

The monitor is quite heavy (the weight is shown in the technical specifications). We recommend you ask the assistance of a second person when lifting or moving it.

USA and Canada

If the power cord is not supplied with your monitor, select the proper power cord according to your national electric safety codes.

- USA: use a UL Listed detachable power cord, type SVT.
- Canada: use a CSA certified detachable power cord.

Si le cordon secteur n'est pas livré avec votre moniteur, utiliser un cordon secteur en accord avec votre code électrique national.

- USA: utiliser un cordon secteur UL Listé, de type SVT.
- Canada: utiliser un cordon secteur certifié CSA.

What Your New Monitor Offers

Your HP52 monitor is a 15-inch (13.8-inch viewable image), high resolution, multi-synchronous color monitor. Multi-synchronous means that the monitor supports a range of video modes. It is optimized to be used with all Hewlett-Packard PCs.

Your HP color monitor has the following features:

- A 15-inch flat square tube, with a 13.8-inch viewable image, and 0.28 mm dot pitch for excellent graphics.
- Anti-static, non-glare silica coating to minimize reflection.
- Support of VGA and Ergonomic VGA (640×480),
  Super VGA and Ergonomic Super VGA (800×600) and
  Ultra VGA (1024×768 non-interlaced) solutions.
- 85 Hz refresh rate in VGA and SVGA(VESA[1] standard) giving a flicker free image and reduced eye strain.
- Image adjustment using digital controls on the front panel. You can adjust the image size, position and geometry.
- Display power management system (VESA standard) controlled from suitably equipped HP PCs to automatically reduce the power consumption of the display. As an Energy Star Partner, Hewlett-Packard has determined that this product meets the Energy Star guidelines for energy efficiency.
- Complies with MPRII guidelines for upper limits of electrical and electrostatic emissions, from the Swedish National Board for Measurement and Testing.
- Monitor Plug and Play capability (VESA DDC1/2B standard) that enables the monitor to identify itself to suitably equipped HP PCs.
- Compliance with ISO 9241-3, ISO 9241-7 and ISO 9241-8 ergonomic standards.

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1.   VESA is the Video Electronics Standards Association.

Setting Up Your Monitor

Attaching the Tilt and Swivel Base

Your display has a tilt and swivel base. To fit and tilt the swivel base:

1 Turn the monitor on its side (never on the screen). Identify the front of the base.
2 Locate the slots in the underside of the display.
3 Slide the base towards the front of the display until the locking tab on the base clicks into place.
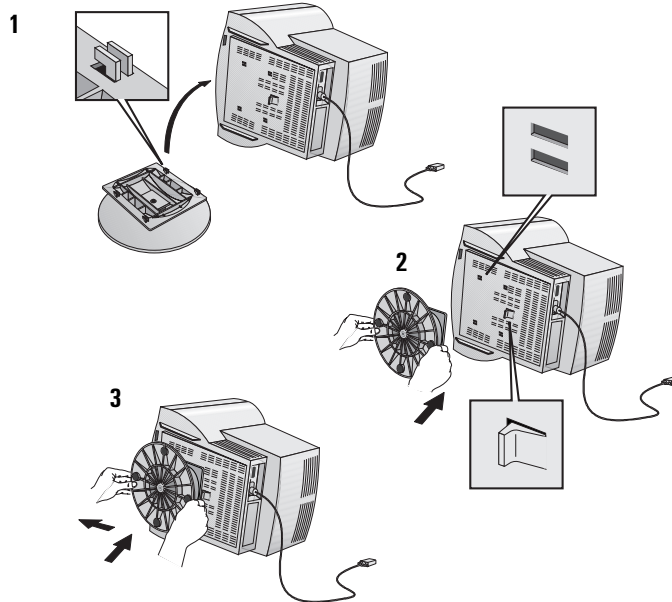
Where to Place the Monitor

Place your monitor on a flat sturdy surface.

Ensure the operating site is free from excessive heat, moisture, dust and sources of electromagnetic fields. Sources of electromagnetic fields include transformers, motors, and other monitors.

Avoid exposing the monitor to direct sunlight.

Connecting the Cables

CAUTION   Before you connect any cables, or install your HP monitor, refer to the safety instructions at the beginning of this manual. Refer also to the user manual which accompanies your PC and video adapter to ensure this equipment is correctly installed.

1 Make sure that your PC and monitor are switched off.
2 Connect one end of the video cable to the video outlet of your PC, and the other end to the video input of your monitor. Tighten the thumbscrews on the plugs.
3 Connect the power cord to the monitor.
4 Plug the power cord into a grounded power outlet.

1 PC and Monitor OFF

2

Video cable

3

Power cords

4
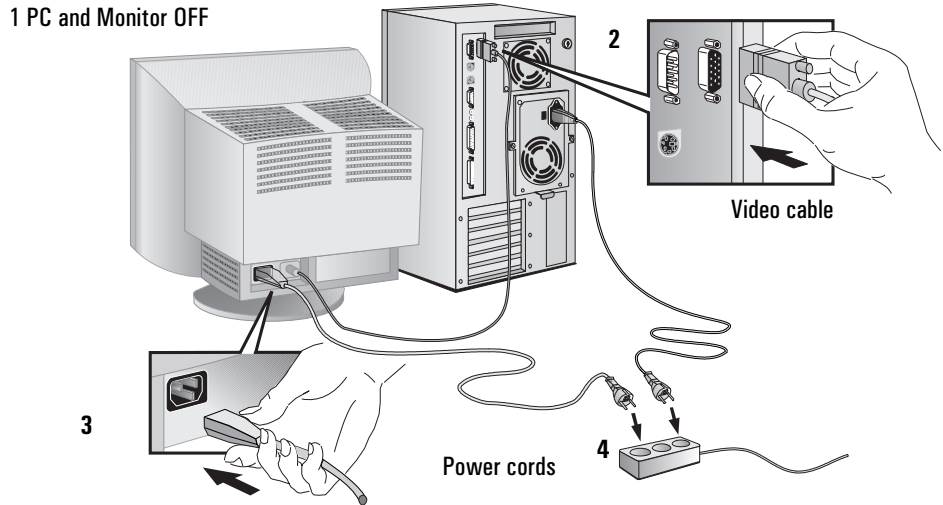
NOTE   The location of your PC's video outlet may be different to the one shown in the diagram. Refer to the manual that came with your PC, if necessary.

Using Your Monitor

You can adjust the quality, position, size and shape of the displayed image by using the adjustment controls on the front panel.

The new settings are saved 20 seconds after making the adjustment. The indicator lights on the front panel light up at the same time to show the new settings have been saved.

When you reach the maximum or minimum value for an adjustment, the adjustment indicator light blinks on and off.

On/Off Switch

Status Indicator

Lights indicate which adjustment is selected

Use these buttons to select an image adjustment

Use these buttons to make the adjustment
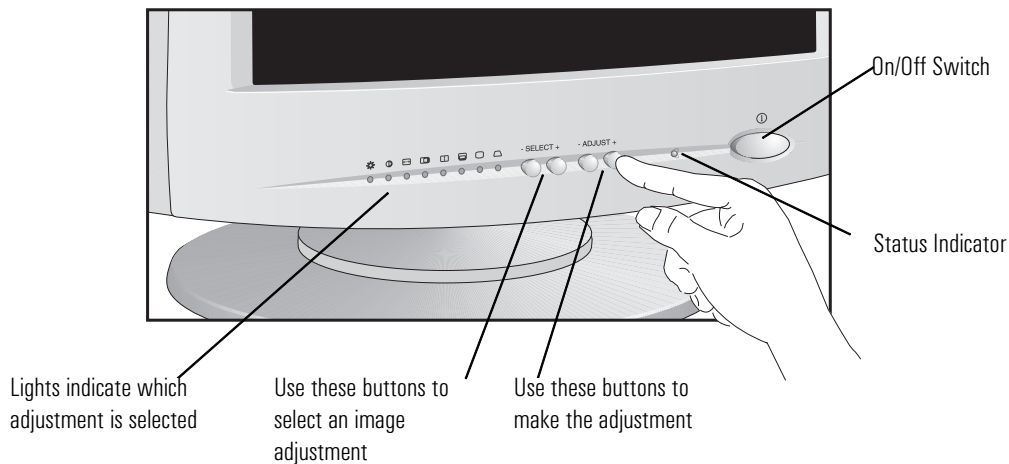
NOTE

Your monitor is automatically demagnetized each time it is switched ON. This ensures color purity. To maintain color purity, we recommend that each week you switch the display off for at least 30 minutes before switching it on again.

Brightness

To adjust the overall picture brightness (image black level), use this adjustment.

Contrast

To adjust the contrast (image white level), use this adjustment.

Width

To adjust the width of the displayed image, use this adjustment.

Horizontal Centering — To adjust the horizontal size of the displayed image, use this adjustment.

Height — To adjust the height of the displayed image, use this adjustment

Vertical Centering — To adjust the vertical position of the displayed image, use this adjustment.

Pincushion Correction — To adjust the displayed image if its vertical edges appear to bow in or out, use this adjustment.

Trapezoid Correction — To adjust the displayed image if its vertical edges do not appear parallel, use this adjustment

FACTORY SETTINGS — To return to the factory settings, press the buttons shown below simultaneously. The factory settings give optimum values for most adjustments.

− SELECT +   − ADJUST +
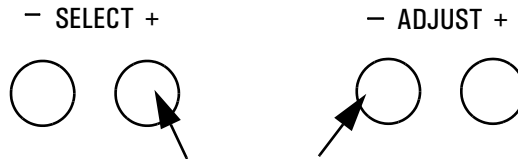
Setting the Amount of Displayed Information

To set the amount of displayed information, change the *screen resolution* of your PC. The higher the screen resolution, the more information you can see on the screen. It is recommended that you use a resolution of 800×600 at 85Hz. This gives easy-to-read characters, a large amount of displayed information, and a flicker-free image.

You can make adjustments to the displayed image and they are automatically saved for the resolution you are using. For example, if you adjust your monitor when working in SVGA those settings are saved for SVGA. If you then work in VGA and change the image settings, they are saved for VGA. The next time you switch back to SVGA, your previous settings are used automatically.

To find out which resolutions are supported by your monitor, refer to "What Video Modes are Supported" on page 10. To change the screen resolution, please refer to the manual that came with your PC or your operating system documentation, if necessary.

Your monitor has a Plug and Play capability (VESA DDC1/2B standard) that enables it to identify itself to suitably equipped HP PCs. This will automatically give you the best refresh rate for the resolution that you have set.

Minimizing Eye Strain

To avoid screen flicker and minimize eye strain, use the highest supported *image refresh rate* for the chosen resolution, for example 85 Hz for 800×600. The image refresh rate is the number of times per second that the image is refreshed.

To find out which image refresh rates are supported by your monitor, refer to "What Video Modes are Supported" on page 10. To set the image refresh rate (also known as the *vertical frequency*), refer to the manual that came with your PC or your operating system documentation, if necessary. If your PC supports Plug and Play, it will automatically select the best refresh rate for the screen resolution you have set.

Minimizing Energy Consumption

Your monitor has energy saving capabilities. If your PC supports VESA monitor power management, your monitor will be able to enter the following modes:

- Standby Mode. This mode uses less than 60W. In this mode the screen blanks and the monitor's front panel indicator light is constantly amber. The monitor remains active, but no image is displayed. Move your mouse or press a key to instantly restore the monitor's image.

- Suspend Mode. This mode uses less than 5W. In this mode the screen blanks, and the monitor's front panel indicator light is constant amber. To reactivate the screen, move your mouse or press a key. The monitor will restore the image after a few seconds.

- Off Mode. This mode uses less than 5W. The screen blanks and the monitor's front panel indicator light blinks rapidly in amber.

To set these power saving modes. refer to the manual that came with your PC. If your screen is not displaying an image, check the front panel indicator light first - your monitor may be in a power saving mode.

What Video Modes are Supported

Your monitor supports the video modes shown in the table below.

Screen Resolution	Image Refresh Rate	Video Solution
640×400	70 Hz	VGA
640×480	60 Hz	VGA
640×480	75 Hz	Ergonomic VGA
640×480	85 Hz	Ergonomic VGA
800×600	60 Hz	Super VGA
800×600	75 Hz	Ergonomic Super VGA
800×600	85 Hz	Ergonomic Super VGA
1024×768	60 Hz	Ultra VGA 1024

CAUTION   All LEDs will flash when the frequency is out of range. Selecting a video mode on your PC with a screen resolution/image refresh rate combination higher than 1024×768 at 60Hz can damage your monitor.

Technical Specifications

PICTURE TUBE	Size	15-inch flat screen/ 13.8-inch viewable image
	Phosphorous	Red, Green, Blue P22 (medium short persistence)
	Dot pitch	0.28 mm
	Face Plate	Anti-glare, anti-static, silica coating
INPUT SIGNAL	Video	0.7 Vp analog RGB
	Synchronization	TTL level separate synchronisation (negative/positive)
INTERFACE	Input Connector	15-pin mini D-SUB
SCANNING FREQUENCY	Horizontal	30 to 54kHz
	Vertical	50 to 120 Hz
WARM-UP TIME	30 minutes to reach optimum performance level	
PIXEL CLOCK	65 MHz	
DISPLAY SIZE	283×212mm (maximum size)	
POWER SOURCE	100-240 Vac / 50-60Hz. 75W max.	
OPERATING ENVIRONMENT	Temperature	10 °C to 40 °C (operating)
	Humidity	20% RH through 90% RH (without condensation)
STORAGE ENVIRONMENT	Temperature	-20 °C to +60 °C
	Humidity	10% RH through 95%RH
CABINET DIMENSIONS	376(W) × 373(H) × 385(D) mm (including pedestal)	
WEIGHT	12.5 kg (27.5 lbs)	
TILT/SWIVEL STAND	Tilt Angle	- 5° to +15°
	Swivel Angle	-45° to +45°

Care and Cleaning

Do not place anything on top of the monitor. Doing so may block the monitor vents and cause damage to the monitor due to overheating.

Do not let liquid get on or into the monitor.

To maximize screen life and prevent damage to the picture tube (such as *burned phosphor* due to leaving the same image on the screen for a long time), it is recommended that you:

- Use the monitor power management system (on HP PCs) or a screen saver program.

- Avoid setting contrast and brightness to their maximum levels for prolonged periods.

- If you do not have a power management system or a screen saver program, switch the monitor off or reduce the brightness and contrast to minimum levels when the monitor is not in use.

Your monitor has an anti-glare, anti-static screen coating. To prevent damage to the monitor screen's coating, use a regular household glass cleaner when cleaning the screen. To clean the screen:

1 Switch the monitor off and remove the power plug (pull the plug, not the cable).

2 Wet a soft cotton cloth with the cleaning solution and gently wipe the screen. Do not spray cleaner onto the screen because the cleaner may drip inside the monitor.

3 Dry with a clean, soft cotton cloth.

Do not use cleaning solutions containing fluoride, acids, or alkalis.

Environmental Information

HP has a strong commitment toward the environment. Your HP monitor has been designed to respect the environment as much as possible.

HP can also take back your old monitor for recycling when it reaches the end of its useful life.

HP has a product take-back program in several countries. The collected equipment is sent to of HP's recycling facilities in Europe or the USA. As many parts as possible are reused. The remainder is recycled. Special care is taken for batteries and other potentially toxic substances, which are reduced to non-harmful components through a special chemical process. If you require more details about HP's product take-back program, contact your dealer or your nearest HP Sales Office.

The cathode ray tube used in this monitor does not contain cadmium.

Hardware Warranty

PART I - HP General Hardware Warranty

General

This HP Monitor Hardware Warranty Statement gives you, the customer, express warranty rights from HP, the manufacturer.

FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND: THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

THE LAWS OF YOUR COUNTRY MAY PROVIDE FOR DIFFERENT WARRANTY RIGHTS. IF SO, YOUR AUTHORIZED HP DEALER OR HP SALES AND SERVICE OFFICE CAN PROVIDE YOU WITH DETAILS

Warranty repair or replacement

Model	Warranty Period	Service provided
Model D2828A	1 year	On-site service

Hewlett-Packard (HP) warrants this monitor hardware product, or accessory against defects in materials and workmanship for the applicable warranty period stated above, commencing from the date of delivery of the product to the end-user customer.

HP does not warrant that the HP hardware will operate uninterrupted or error free.

If, during the product warranty period, HP is unable, within a reasonable time, to repair or replace your product to the condition as warranted, you will be entitled to a refund (in the amount of the product purchase price) upon prompt return of the product to your authorized HP dealer or other HP designate. Unless otherwise stated or agreed upon in writing with HP, all hardware components must be returned for refund with the entire system process unit.

HP software is covered by the HP Software Product Limited Warranty located in your HP product manual.

Unless otherwise stated, and to the extent permitted by local law, hardware products may contain remanufactured parts (equivalent to new in performance) or parts which may have been subject to prior incidental use. HP may repair or replace hardware products (i) with products which are equivalent in performance to the products being repaired or replaced but which may have been subject to prior use, or (ii) with products which may contain remanufactured parts equivalent to new in performance or parts which may have been subject to prior incidental use.

Proof of Purchase and Warranty Period

In order to receive service or support for your hardware product for the warranty period, proof of the original purchase date of the product may be required in order to establish the delivery date of your product. If the delivery date is not available, either the purchase date or the manufacturer's date (located on the product) becomes the beginning of the warranty period.

Limitation of Warranty

Warranty does not apply to defects resulting from: (a) improper or inadequate maintenance or calibration; (b) software, interfacing, parts or supplies not supplied by HP; (c) unauthorized repair, maintenance, modification or misuse; (d) operation outside of the published operating specifications for the product; (e) improper site preparation or maintenance; or (f) such other exclusions as may be expressly set forth in this Warranty Statement.

HP MAKES NO OTHER EXPRESS WARRANTY, WHETHER WRITTEN OR ORAL, WITH RESPECT TO THIS PRODUCT.

TO THE EXTENT ALLOWED BY APPLICABLE LOCAL LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY SET FORTH ABOVE.

Limitation of Liability and Remedies

TO THE EXTENT ALLOWED BY APPLICABLE LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL HP BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGE, WHETHER BASED ON WARRANTY CONTRACT, TORT, OR ANY OTHER LEGAL THEORY.

The foregoing limitation of liability shall not apply in the event that any HP product sold hereunder is determined by a court of competent jurisdiction to be defective and to have directly caused bodily injury, death, or property damage. To the extent allowed by applicable local law, HP's liability for property damage does not exceed the greater of $50,000 or the purchase price of the specific product that caused such damage.

PART II - Year 2000 Warranty

Subject to all of the terms and limitations of the HP Limited Warranty Statement provided with this HP Product, HP warrants that this HP Product will be able to accurately process date data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000, including leap year calculations, when used in accordance with the Product documentation provided by HP (including any instructions for installing patches or upgrades), provided that all other products (e.g. hardware, software, firmware) used in combination with such HP Product(s) properly exchange date data with it. The duration of the Year 2000 warranty extends through January 31, 2001.

Regulatory Information

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DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name:	**HEWLETT-PACKARD France**
Manufacturer's Address:	5, Avenue Raymond Chanas - EYBENS
	38053 GRENOBLE CEDEX 09 - FRANCE

declares, that the product:

Product Name: HP 52 15-inch Color Monitor

Model Number: D2828A

conforms to the following product specifications:

SAFETY
International: IEC 60950:1991 +A1 +A2 +A3 +A4 / GB4943-1995
Europe: EN 60950:1992 +A1 +A2 +A3 +A4

EMC
- CISPR 22:1993+A1+A2/ EN 55022:1994+A1+A2 Class B 1)
-EN 50082-1:1992
    IEC 801-2:1992 / prEN 55024-2:1992 - 4kV CD, 8kV AD
    IEC 801-3:1984   - 3V/m
    IEC 801-4:1988 / prEN 55024-4:1992 - 1 kV Power Lines

-IEC 555-2:1982+A1:1985 / EN60555-2:1987
-IEC 61000-3-3:1994 / EN61000-3-3:1995
-GB9254-1988
-FCC Title 47 CFR, Part 15 Class B 2)

Supplementary information: The product herewith complies with the requirements of the following Directives and carries the CE-marking accordingly:
EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC, both amended by the Directive 93/68/EEC.

1) The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2) 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.

Jean Marc JULIA
Quality Manager

Grenoble,May,1999

For Compliance Information ONLY, contact:
USA contact: Hewlett Packard Company, Corporate Product Regulations Manager,3000 Hanover Street,
Palo Alto, CA 94304. (Phone (415) 857-1501)

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Notice for the USA: FCC Statement

Federal Communications Commission (FCC) Radio

Frequency Interference Statement (USA Only)

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 protections 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 one of more of the following measures:

- Relocate the radio or television antenna.

- Move the computer away from the radio or television.

- Plug the computer into a different electrical outlet, so that the computer and the radio or television are on separate electrical circuits.

- Make sure that all your peripheral devices are also FCC Class B certified.

- Make sure you use only shielded cables to connect peripheral devices to your computer.

- Consult your computer dealer, Hewlett-Packard, or an experienced radio/television technician for help.

WARNING

Hewlett-Packard's system certification tests were conducted with HP-supported peripheral devices and HP shielded cables, such as those you received with your system. Cables used with this computer must be properly shielded to comply with the requirements of the FCC.

Changes or modifications not expressly approved by Hewlett-Packard could void the user's authority to operate the equipment.

X-Ray Radiation Notice

When operating, this product emits x-rays; however, it is well shielded and meets the safety and health requirements of various countries, such as the Radiation Act of Germany and the Radiation Control for Health and Safety Act of the United States.

Radiation emitted by this product is less than 0.1 mR/hr (1uSv/hr) at a distance of 10 centimeters from the surface of the cathode ray tube. The x-ray radiation primarily depends on the characteristics of the cathode ray tube and its associated low voltage and high voltage circuitry. Internal controls have been adjusted to ensure safe operation. Only qualified personnel should perform any internal adjustments as specified in the service manual for this product.

Replace the cathode ray tube with an identical CRT only.

General Notice

The HP D2828A 15-inch Color Monitors have been tested according to MPR 1990:8 for Emission properties and meets the guidelines as given by MPR 1990:10 (2.01 - 2.04)
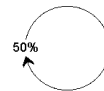
Notice for Canada

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

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

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PACKARD

50%

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