digital™

PCXBV-Px Multi-Scanning 14-inch Color Monitor

Installation and Operating Information

Order Number: EK–PCXBV–PX. B01

April 1994

FCC ID: H4ICM14013

Note: 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. Any changes or modifications made to this equipment may void the user's authority to operate this equipment.

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 and television reception; 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:

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

DO NOT attempt to modify this equipment. If modified, your authority to operate this equipment might be voided by the FCC.

Canadian Department of Communications Statement
This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

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Contents

Figures

Tables

About This Guide

Overview

The PCXBV-Px Monitor is a 14-inch *multi-scanning* color monitor with high resolution, compatible with VGA, SVGA 72 Hz and 75 Hz modes.

The PCXBV-Px offers the following features:

- 1024 horizontal × 768 vertical non-interlaced resolution
- Power management system that exceeds the EPA Energy Star requirements for saving energy

- Complies with Swedish MPR2 standards for low magnetic emissions
- Anti-glare screen with anti-static coating
- Tilt-swivel base

This product has been designed and manufactured to minimize the impact to the environment. The monitor also has a power management feature, which a personal computer can control to reduce the monitor's output power levels while not in use, thus saving energy.

Audience

This guide is intended for users who wish to install the monitor.

Conventions

The following conventions are used in this document:

Convention	Meaning
Note	Provides general information.
Caution	Provides information to prevent damage to equipment.
Warning	Provides information to prevent injury.

Proper Setup and Use—Important Information

Certain recent scientific literature suggests that poor posture, work habits, or office equipment setup may cause injuries. Other literature suggests that there is no cause and effect. Because the safety of our users is a great concern, it is important to take the precautions described in Table 1.

If you experience pain or discomfort while using the monitor, take a substantial break and review the instructions for posture and work habits. If your pain or discomfort continues when you resume using the monitor, discontinue use and report the condition to your job supervisor or physician.

Table 1 Recommendations for Proper Setup and Use

Adjust	So that your . . .	
Chair	1	Feet are flat on the floor or footrest, if needed.
	2	Legs are vertical forming a right angle to the floor.
	3	Weight is off your thighs and are in a horizontal position. Keep the back of your knees away from the seat so you do not compress the area behind them, which could restrict the blood flow.
	4	Upper body is erect and your lower back is supported with a backrest.
Keyboard	5	Wrists are straight and do not flex more than 15°. They may be supported but should not rest on sharp edges.

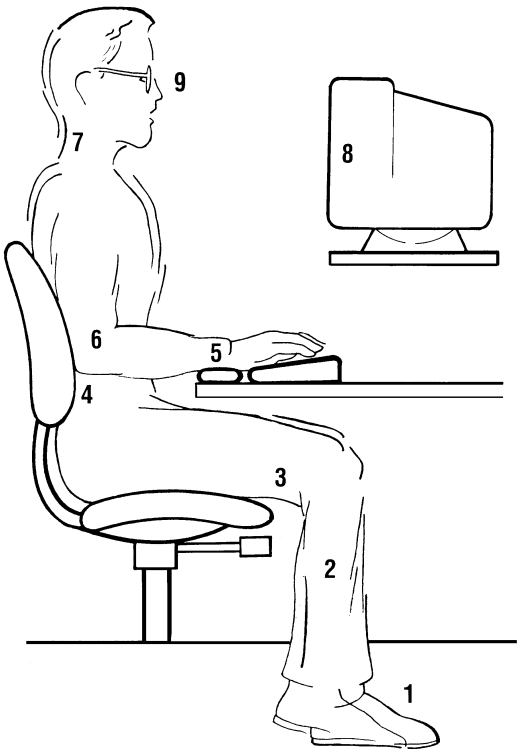

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Table 1 (Cont.) Recommendations for Proper Setup and Use

Adjust	To . . .	
	6	Keep your upper arms straight down at your sides, elbows close to your sides to support your arm weight. Forearms should be at a 70° to 90° angle.
Head	7	Avoid neck strain. Your head should incline downward, but no more than 15° to 20°.
Monitor	8	Keep eye level and the correct distance for proper vision.
Eyes	9	Avoid eye fatigue, which can be caused by glare, image quality, uncomfortable furniture, eye height, and uncorrected vision. If you cannot read the screen at different distances, you may need special glasses. Relax your eyes periodically by looking at distant objects.
Work Breaks		Take periodic work breaks. Morning, lunch, and afternoon breaks meet most recommendations. Take advantage of work breaks to move around and do other movements.
Lighting		Avoid direct lighting or sunlight on the screen, which causes glare and reflections. The monitor screen has an antiglare treatment to reduce glare. Place lighting behind or to the side of your work area, and distribute the lighting evenly on your work area. Adjust the monitor brightness and the contrast controls as needed.
Noise		Keep background noise at a minimum. Background noise above 65 dBA is tiring. Sound-absorbing materials, such as curtains, carpeting, and acoustic tile, can help reduce background noise.
Temperature		20°C to 23°C (68°F to 74°F)
Humidity		30% to 70%
Ventilation		Provide adequate air ventilation for equipment operation and to avoid fatigue.
Space between terminals		More than 70 cm (28 in) center to center, preferably more than 152 cm (60 in).

Installation/Operating Guidelines

Observe the following basic rules for installation and use.

Do . . .

- Use the power cord supplied with the monitor, which is UL-, CSA-, and VDE-approved.
- Turn the monitor off when not being used for an extended period of time.

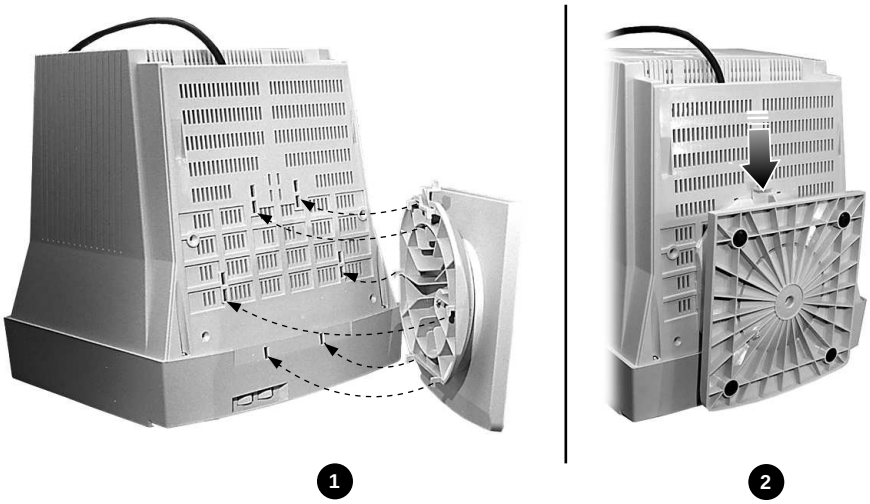
Do Not . . .

- Overload the ac outlet.
- Move the monitor on a stand over carpet or thresholds.
- Push objects into the monitor's openings.
- Add accessories that are not designed for this monitor.
- Operate the monitor near water or in a damp environment, which could cause an electrical shock hazard.
- Operate the monitor near magnets, motor devices, transformers, high power lines, or large steel pillars, which can cause distortion in the picture.
- Obstruct the ventilation openings in the monitor's cabinet, such as placing the monitor on a rug or within an enclosure.
- Place the monitor near a radiator or heat source.

1
Installation

1.1 Install the tilt/swivel stand.

1. Insert the hooks on the stand into the slots in the bottom of the monitor.
2. Apply pressure near the latch so it is secure. (To remove the stand, pull on the latch.)



1.2 Monitor Installation

To connect your monitor:

1. Make sure the power to the monitor and the computer is off.
2. Connect the monitor's signal cable to the 15-pin interface connector on the High Resolution Graphic Video Adapter on the back of the computer.
3. Plug in the ac power cord to the monitor, then to a properly-grounded ac electrical outlet.

Figure 1–1 PCXBV-Px Monitor (Rear View)

Turn On Power to Monitor

Push the power switch button ❻ to turn on the monitor. The power indicator LED to the left of this switch should light green.

Figure 1–2 PCXBV-Px Monitor (Control Panel)

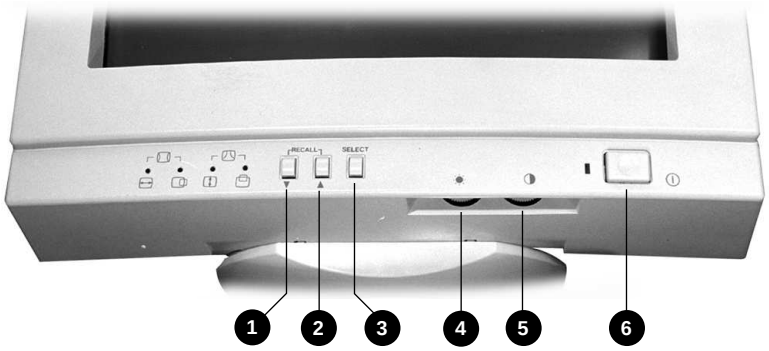


Table 1–1 User Controls and Functions

Item		Function
❶	▽	Decreases the value of the selected adjustment.
❷	△	Increases the value of the selected adjustment.
	▽ △	Pressing both the ▽ and △ buttons simultaneously *recalls* the default value for that adjustment.
❸	Select	Selects the adjustment function to be performed, indicated by the LEDs. See Section 2.3, Monitor Adjustments.
❹	Brightness	Adjusts background brightness of the display.
❺	Contrast	Adjusts the contrast between the background and the displayed text.
❻	Power button and LED	Turns the monitor on and off; LED lights when ac power is on and changes color for power saving states. (See Section 3.3, Power Management System.)

2

Servicing

2.1 Cleaning the Monitor

To clean the monitor:

1. Unplug the monitor.
2. Clean the monitor with a soft, slightly damp cloth. **Do not** use an aerosol cleaner directly on the screen.

Caution

Do not use benzene, thinner, or any volatile substance to clean the monitor, as these product may discolor the monitor's cabinet. Likewise, do not place rubber or vinyl on the monitor.

2.2 Maintenance and Troubleshooting

2.2.1 Identifying and Correcting Problems

The following can be sources of problems:

- Communications cables
- Host system
- Nearby power or electrical sources

2.2.2 Troubleshooting Table

Use Table 2–1 to identify and correct any problem areas.

Table 2–1 Identifying and Correcting Problems

Symptom	Possible Cause	Suggested Solution
Display does not appear.	Brightness or Contrast control is set too low.	Increase the brightness and contrast control setting.
	Power Management feature is active in the off state.	Press any key and allow 20 seconds for the monitor to warm up.
	There is no power.	Check the power cord. Use another ac outlet.
Video display has moving dots and distorted lines. The display rolls or flickers.	There is electromagnetic interference.	Move any electromechanical device, such as a fan or a motor, away from the monitor or move the monitor.

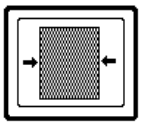
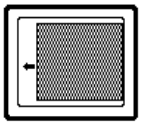
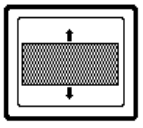
2.3 Monitor Adjustments

Use the following procedure:

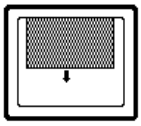
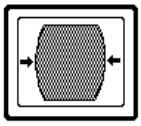
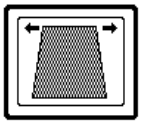
1. Press the select button to choose the function that needs adjustment. When the LED above the function lights up, the control is active and can be adjusted.
2. Press the ▽ or △ buttons to decrease or increase the adjustment. When an adjustment reaches the end of its range, the LED will flash.

All adjustments that you make are saved automatically, and maintained after the power is turned off. You may recall factory settings by using the Recall function.

With the LED(s) on, you can make the following adjustments:

LED	Screen	Adjustment
↔		**Horizontal Size** – Narrows ▽ or widens △ the image.
⇔		**Horizontal Shift**— Moves the horizontal position to the left ▽ or right △.
↕		**Vertical Size**— Shrinks ▽ or expands △ the height of the image.

Servicing
2.3 Monitor Adjustments

LED	Screen	Adjustment
		**Vertical Shift**— Moves the image down ▽ or up △.
		**Pin/Barrel (H Size + H Shift)**— Corrects a bowed image by narrowing ▽ or widening △ the left and right edges.
		**Trapezoid (V Size + V Shift)**—Corrects a trapezoid image by expanding ▽ the bottom or top △ of the image.

Warning

Serious shock hazards exist inside this display. There are no user serviceable parts inside. DO NOT remove covers under any circumstances or attempt to service the monitor yourself. Call a qualified service representative.

2.4 Servicing the Monitor

Digital provides a wide range of maintenance programs for monitors. It is recommended that you use either DECmailer or Carry-In Service when servicing the PCXBV-Px monitor. If needed, use the original box and packing material to send the unit to the service location. Contact your local Digital Services office.

2.4.1 DECmailer

DECmailer provides a mail-in service for the PCXBV-Px monitor. Ship the monitor to your nearest Digital Servicenter using a common carrier. The monitor will be repaired or exchanged and returned to you.

2.4.2 Carry-In Service

Digital Carry-In Servicenters are located in major cities around the world. They offer convenient, cost-effective repair service with a 48-hour turnaround time.

2.4.3 Monitor Disposal

Warning

If you need to dispose of a unit, ask a qualified service representative for the proper procedure. Improper disposal could result in personal injury from implosion.

3
Specifications

3.1 Monitor Specifications

Monitor	35.5 cm (14 in) non-glare, non-static
Active area	24.7 × 18.5 cm
Height	35.9 cm (14.1 in)
Width	35.4 cm (13.9 in)
Depth	38.0 cm (15.0 in)
Swivel	±45°
Tilt	-5° to +15°
Weight	13 Kg
Video Signal	0.7V p-p R, G, B color; separate Sync (positive or negative); 75Ω TTL
Connector	15-pin D-sub
Power input	100 - 240 Vac, 1.6 A max; 50 Hz or 60 Hz
Environment:	
Operating Temperature	5 - 40°C
Humidity	20 - 60% relative humidity (noncondensing)

3.2 Scanning Modes

To minimize adjustment needs, the monitor has 11 factory pre-set display standards, shown in Table 3–1. When the monitor detects any of these display standards, it automatically adjusts the picture size and centering. All the vertical refresh rates are *non-interlaced*.

Table 3–1 Factory Pre-set Resolution and Frequencies

Pre-set Addressability (Pixels x Lines)	Vertical Refresh (Hz)	Horizontal Frequency (kHz)
640 x 480 (VGA/60)	59.95	31.47
640 x 480 (VGA VESA 72)	72.81	37.86
640 x 480 (VGA VESA 75)	75.00	37.50
800 x 600 (SVGA VESA 75)	75.00†	46.88†
1024 x 768 (VESA 70)	70.07	56.48
1024 x 768 (VESA 75)	75.03†	60.02†
640 x 350	70.08	31.47†
720 x 400	70.08†	31.47
800 x 600 (SVGA/60)	60.32†	37.88†
800 x 600 (SVGA VESA 72)	72.19†	48.08†
1024 x 768	60.00	48.36

†positive polarities

3.3 Power Management System

The monitor has three power-saving states, indicated by the LED on the front panel:

LED	State	Power Consumption†	Recovery Time
Green	On	Normal 150 w (max)	-
Light amber	Standby/ Suspend	< 15 watts	3 s
Dark amber	Off	< 5 watts	15 s

† These power-saving states exceed the Environmental Protection Agency (EPA) Energy Star requirements using the Video Electronics Standard Association (VESA) methodology for Display Power Management Signals.

For proper operation of this Power Management System, make sure that the monitor signal cable is connected to the host system and that the host system is On.

3.4 Environment

This product has been designed and manufactured to minimize the impact to the environment. The packaging is recyclable and the monitor can be returned for proper disposal.

Acoustic Levels

Preliminary declared values per ISO 9296 and ISO 7779:

	Sound Power Level[1] L_{wAd}, B		Sound Pressure Level[2] L_{pAm}, dBA	
Product	Idle	Operate	Idle	Operate
PCXBV-Px	<4.0	<4.0	<35	<35

[1] 1 B = 10 dBA.
[2] Operator position.

Specifications
3.4 Environment

Asbestos

This product does not use asbestos in any form.

Flame Retardants

The enclosures do not contain polybrominated diphenylether (PBDE) as a flame retardant additive; therefore, they do not emit toxic dibenzofuran and dibenzodixion gases.

Ozone Depleting Substances (ODS)

The PCXBV-Px is in full compliance with the labeling requirements in the U.S. Clean Air Act Amendments of 1990. It does not contain, nor is it manufactured with, a Class 1 ODS, as defined in Title VI Section 611 of this act.

PVC

The plastic enclosures are not made of rigid PVC. The material has a non-halogenated, flame-retardant system and is cadmium free.

Recyclable Material

The packaging material can be recycled, or you can save it to return the monitor to a service center for repair or disposal.

VCCI Class 2

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