



**VR319 Monitor**

EK-VR319-TC-001

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This chapter describes the VR319 monitor. It tells you about

- VR319 monitor controls and indicators
- Graphics modules that work with the VR319 monitor
- How to connect a VR319 monitor to your workstation

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## VR319 Monitor Hardware

The VR319 monitor is a 19-inch monitor that can display monochrome or gray-scale graphics. There are two versions of the VR319 monitor, each of which operates at a different frequency.

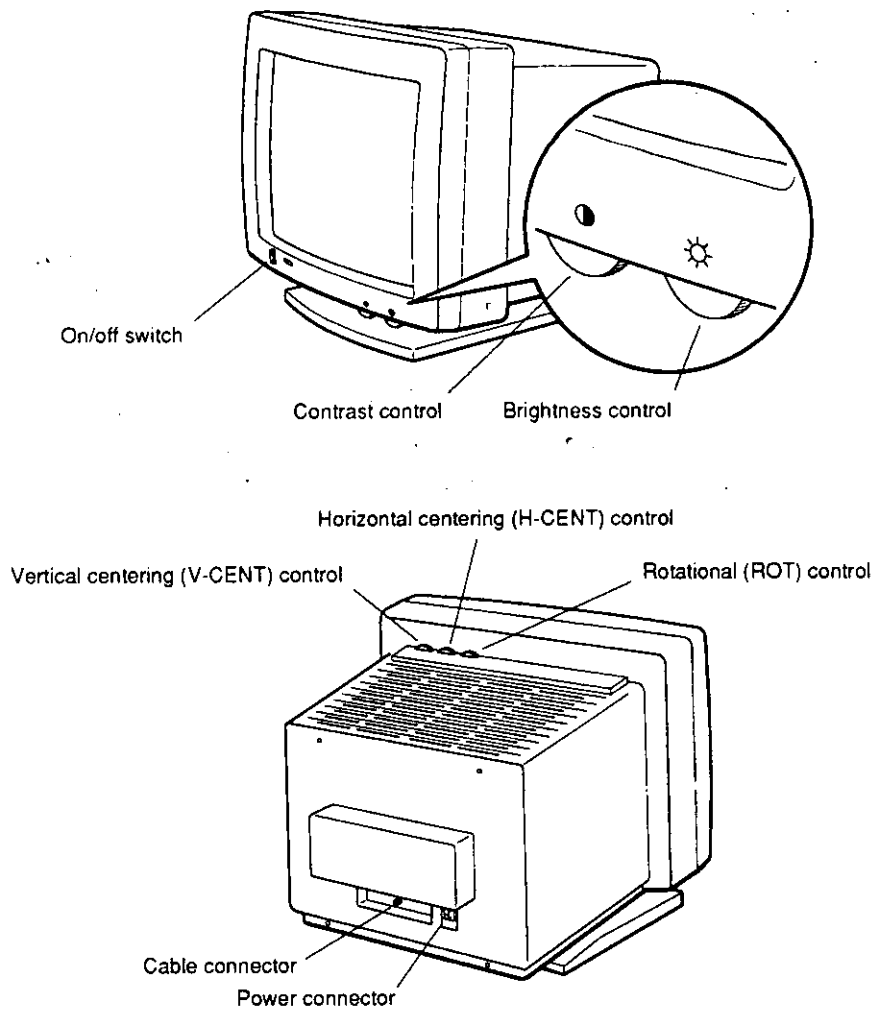
- The VR319-CA operates at 66-Hz.
- The VR319-DA operates at 72-Hz.

The monitor model number appears on the back of the monitor on the label next to the cable connector.

Several controls and connectors on the VR319 monitor let you adjust the monitor and connect it to your workstation. Table 1 lists the purpose of each control and connector.

**Table 1. Controls and Connectors on the VR319 Monitor**

| Item                                  | Function   |
|---------------------------------------|--|
| Power indicator light                 | Glows green when the monitor is receiving power        |
| Contrast control                      | Adjusts the intensity of the display on the screen     |
| Brightness control                    | Adjusts the brightness of the background on the screen |
| Vertical centering (V-CENT)           | Moves the picture upward or downward on the screen     |
| Horizontal centering (H-CENT) control | Moves the picture sideways on the screen               |
| Rotational (ROT) control              | Rotates the picture around the center of the screen    |
| Video cable connector                 | Connects the video cable to the monitor                |
| Power connector                       | Connects the power cord to the monitor                 |
| On/off switch                         | Turns the monitor on and off                           |



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**Figure 1. VR319 monitor controls and indicators**

## Connecting the VR319 Monitor to a Graphics Module

The VR319-CA/C4 monitor can display graphics generated by these TURBOchannel graphics modules:

- 2D graphics accelerator module, model type PMAG-CA
- Smart frame buffer module, model type PMAGB-BA
- Low 3D graphics module, model type PMAG-DA
- Low 3D graphics plus module, model type PMAGB-DC

The VR319-DA/D4 monitor can display graphics generated by these TURBOchannel graphics modules:

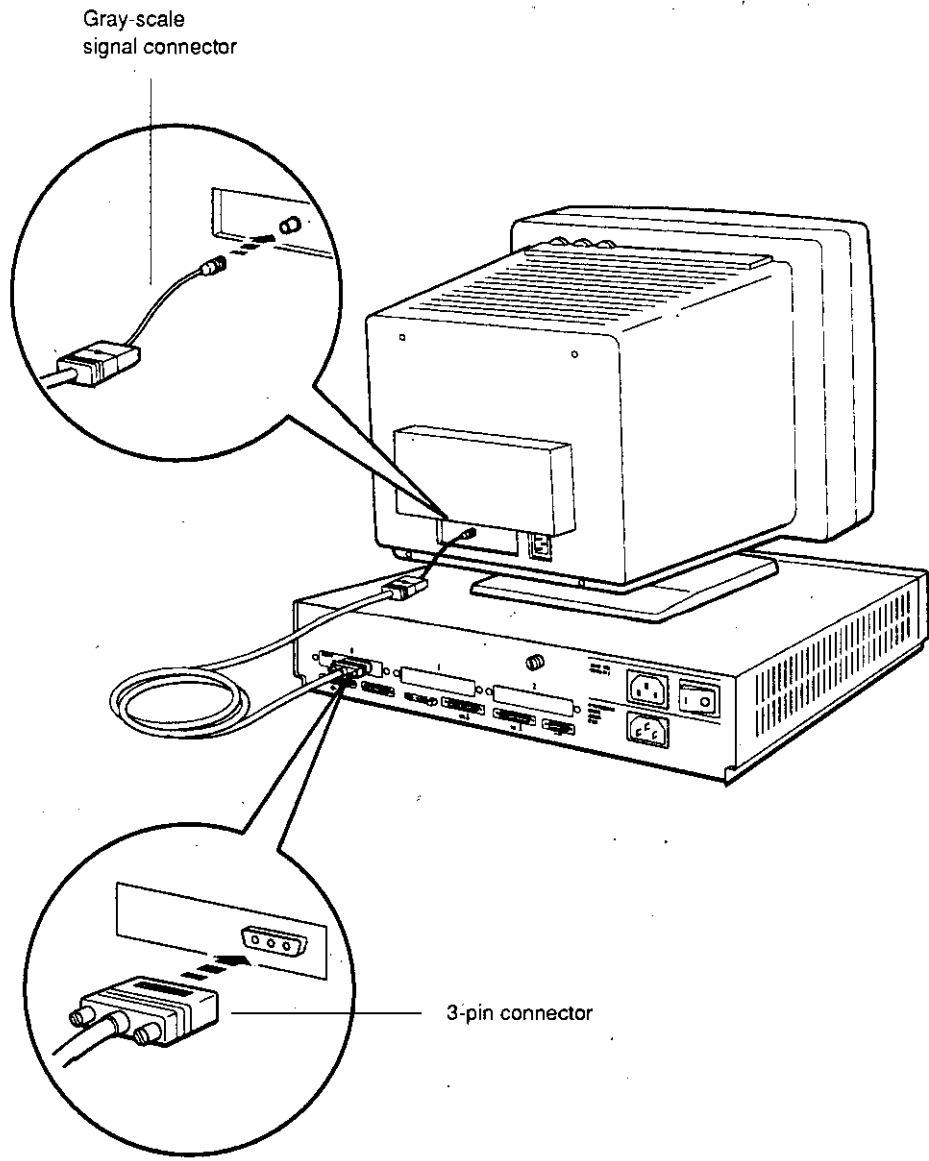
- Monochrome frame buffer module, model type PMAG-AA
- Smart frame buffer module, model types PMAGB-BA, PMAG-BC, and PMAGB-BE
- Low 3D graphics plus module, model type PMAGB-DA

### **To connect the VR319 Monitor to a Color Graphics Module**

1. Find the gray-scale video cable that came with your shipment.
2. Turn off the monitor. Then turn off the workstation or TURBOchannel extender that contains the graphics module to which you want to connect the monitor.
3. Hold the 3-pin connector of the cable assembly so the widest part of the connector is on top.
4. Firmly push the cable connector into the 2D graphics accelerator module connector on the system unit.
5. Tighten the screws on the 3-pin connector to lock the connector securely in place.
6. Align the slots on the collar of the signal cable connector with the pins on the monitor connector.
7. Push the signal cable connector onto the monitor connector. Then twist the cable connector to the right to lock it.

### **To Disconnect a VR319 Monitor from a Color Graphics Module**

1. Turn off the monitor. Then turn off the workstation or TURBOchannel extender connected to the monitor that you want to disconnect.
2. Twist the signal cable connector all the way to the left. Then pull the connector away from the monitor.
3. Loosen the two screws that hold the 3-pin connector to the graphics module.
4. Pull the 3-pin connector away from the graphics module.



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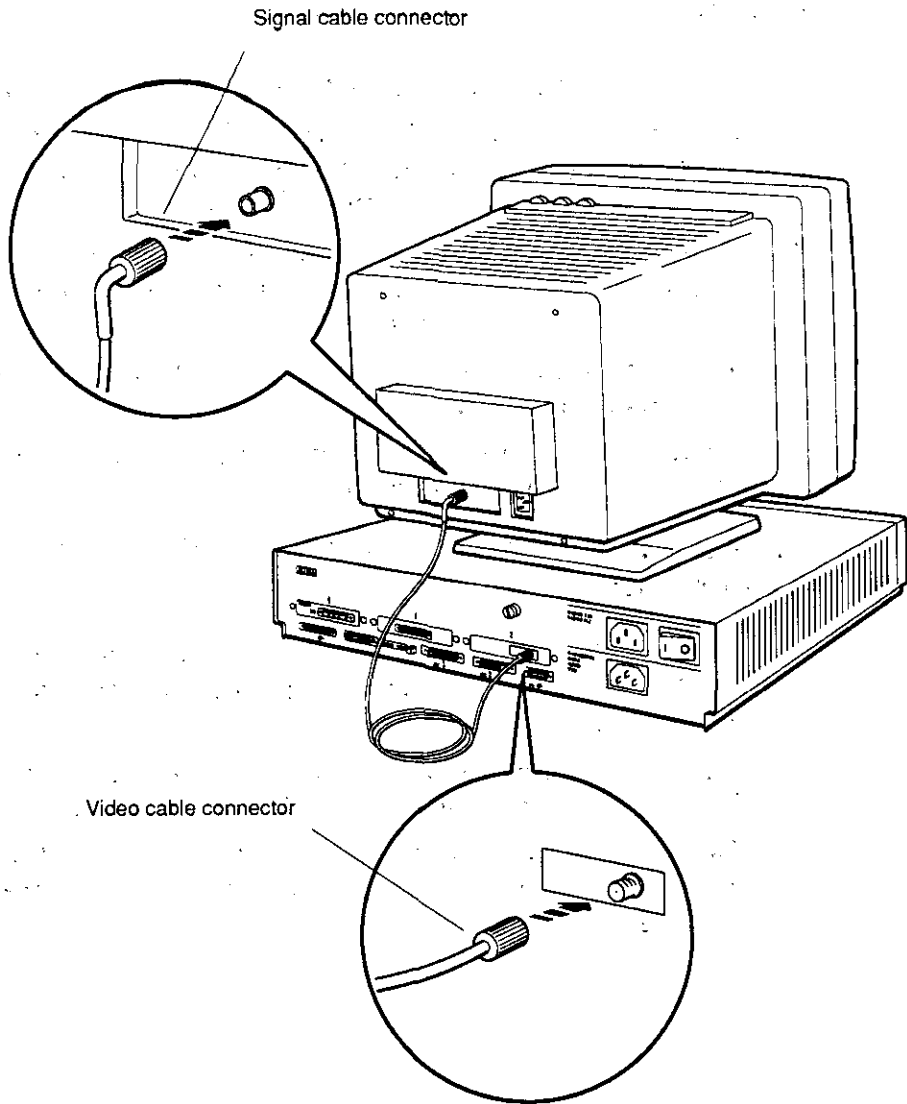
**Figure 2. Connecting a VR319 monitor to a color graphics module**

## **To Connect a VR319 Monitor to a Monochrome Frame Buffer Module**

1. Locate the video cable that came with your shipment.
2. Turn off the monitor. Then turn off the workstation or TURBOchannel extender that contains the graphics module to which you want to connect the monitor.
3. Press the threaded video cable connector onto the monochrome frame buffer module connector and twist it to the right to tighten it.
4. Align the slots on the collar of the slotted connector with the pins on the monitor connector.
5. Push the slotted connector onto the monitor connector. Then twist the connector to the right to lock it.

## **To Disconnect a VR319 Monitor from a Monochrome Frame Buffer Module**

1. Turn off the monitor. Then turn off the workstation or TURBOchannel extender attached to the monitor that you want to disconnect.
2. Twist the signal cable connector all the way to the left. Then pull the connector away from the monitor.
3. Twist the video cable connector all the way to the left. Then pull the connector away from the monochrome frame buffer module.



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**Figure 3. Connecting a VR319 monitor to a monochrome frame buffer module**



## For Further Information



For information about the graphics module that connects to the monitor, see the chapter in this guide that describes that module.



# A

## VR319 Monitor Specifications

**Table A-1. VR319-DA and VR319-D4 Monitor Description**

|   |  |
|---|--|
| Weight                                      | 22.68 kg (50.00 lb)  |
| Height                                      | 45.72 cm (18.00 in)  |
| Width                                       | 49.55 cm (19.50 in)  |
| Depth                                       | 40.13 cm (15.80 in)  |
| External controls, switches, and indicators | Brightness<br>Contrast<br>Degauss<br>Power switch<br>Power indicator<br>Rotation<br>H-center<br>V-center                                       |
| Tilt range                                  | 5° to 15°  |
| Swivel range                                | ±90°   |
| Cathode-ray tube (CRT)                      | 483 mm (19 in) diagonal<br>Monochrome<br>High resolution<br>Paper-white phosphor<br>High-efficiency antiglare treatment                        |
| Display characteristics                     | 1280 pixels horizontal by 1024 lines vertical<br>Approximate picture size 342 by 273 mm<br>Maximum brightness no less than 30 footlamberts (f) |

(continued on next page)

**Table A-1 (Cont.). VR319-DA and VR319-D4 Monitor Description**

|                        |   |
|------------------------|---|
| Video input            |   |
| – Termination          | 75 ohms BNC   |
| – Amplitude            | 1.0 V <sub>pp</sub> composite video                       |
| Refresh rate           | 72 Hz<br>Factory or field service configurable            |
| Horizontal rate timing |   |
| – Active video time    | 9.7853 $\mu$ s  |
| – Back porch           | 1.7124 ns   |
| – Blanking interval    | 3.1802 $\mu$ s  |
| – Frequency            | 77.173 kHz  |
| – Front porch          | 0.2446 ns   |
| – Horizontal period    | 12.9579 $\mu$ s   |
| – Pixels displayed     | 9.7853  |
| – Sync pulse           | 1.2232 ns   |
| Vertical rate timing   |   |
| – Active video time    | 13.2767 $\mu$ s   |
| – Back porch           | 0.427864 ns   |
| – Blanking interval    | 0.505658 $\mu$ s  |
| – Front porch          | 0.038897 ns   |
| – Horizontal period    | 13.7842 $\mu$ s   |
| – Lines displayed      | 13.2767   |
| – Sync pulse           | 0.038897 ns   |
| Power                  |   |
| – Power supply type    | Switch mode ac to dc converter                            |
| – ac input             | Automatic voltage select                                  |
| – Frequency            | 47 to 63 Hz   |
| – Power consumption    | Approximately 123 watts                                   |
| Fuse                   | 250 V: 5 A<br>6.35 by 31.8 mm (0.25 by 1.25 in) slow blow |

**Table A-2. VR319-DA and VR319-D4 Monitor Operating Conditions**

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|                                |                              |
|--------------------------------|------------------------------|
| Temperature range <sup>1</sup> | 10°C to 40°C (50°F to 104°F) |
| Temperature change rate        | 11° (52°F) per hour maximum  |
| Relative humidity              | 10% to 90% noncondensing     |
| Maximum wet-bulb temperature   | 28°C (82°F)                  |
| Minimum dew-point temperature  | 2°C (36°F)                   |
| Altitude                       | 2,400 m (8,000 ft) maximum   |

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<sup>1</sup>Reduce maximum temperature by 1.8°C for each 1,000 meter (1.0°F for each 1,000 ft) increase in altitude.

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**Table A-3. VR319-DA and VR319-D4 Monitor Nonoperating Conditions**

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|                              |                                 |
|------------------------------|---------------------------------|
| Temperature range            | -40°C to 66°C ( -40°F to 151°F) |
| Relative humidity            | 10% to 95% noncondensing        |
| Maximum wet-bulb temperature | 46°C (115°F) packaged           |
| Altitude                     | 4,900 m (16,000 ft) maximum     |

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