



APPENDIX B

I/O Ports and Connectors

This section provides specific information about the input/output (I/O) ports and connectors on the back panel of the system.

I/O Ports and Connectors

The I/O ports and connectors on the back panel of the system are the gateways through which the system communicates with external devices, such as a keyboard, mouse, printer, and monitor. Figure B-1 identifies the I/O ports and connectors for your system.

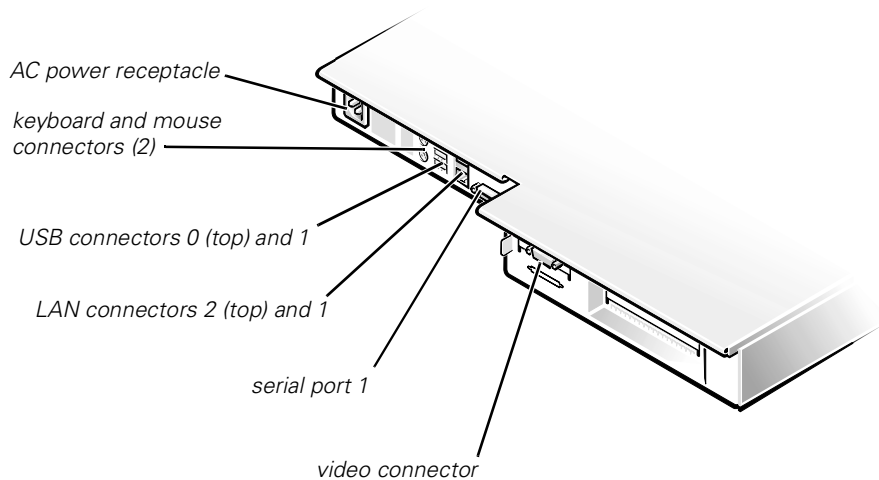


Figure B-1. I/O Ports and Connectors

Serial Ports

The two integrated serial ports on the front and back panels of the system use 9-pin D-subminiature connectors. These ports support devices such as external modems, printers, plotters, and mice that require serial data transmission (the transmission of data one bit at a time over one line).

Most software uses the term COM (for communications) plus a number to designate a serial port (for example, COM1 or COM2). The default designations of your system's integrated serial ports are COM1 and COM2.

Serial Port Connectors

If you reconfigure your hardware, you may need pin number and signal information for the serial port connectors. Figure B-2 illustrates the pin numbers for the serial port connectors and Table B-1 defines the pin assignments and interface signals for the serial port connector.



Figure B-2. Pin Numbers for the Serial Port Connectors

Table B-1. Serial Port Pin Assignments

Pin	Signal	I/O	Definition
1	DCD	I	Data carrier detect
2	SIN	I	Serial input
3	SOUT	O	Serial output
4	DTR	O	Data terminal ready
5	GND	N/A	Signal ground
6	DSR	I	Data set ready
7	RTS	O	Request to send
8	CTS	I	Clear to send
9	RI	I	Ring indicator
Shell	N/A	N/A	Chassis ground

Keyboard and Mouse Connectors

The system uses a Personal System/2 (PS/2)-style keyboard and supports a PS/2-compatible mouse. Cables from both devices attach to 6-pin, miniature *Deutsche Industrie Norm* (DIN) connectors on the back panel of your system.

Mouse driver software can give the mouse priority with the microprocessor by issuing IRQ12 whenever a new mouse movement is detected. The driver software also passes along the mouse data to the application program that is in control.

Keyboard Connector

If you reconfigure your hardware, you may need pin number and signal information for the keyboard connector. Figure B-3 illustrates the pin numbers for the keyboard connector and Table B-2 defines the pin assignments and interface signals for the keyboard connector.



Figure B-3. Pin Numbers for the Keyboard Connector

Table B-2. Keyboard Connector Pin Assignments

Pin	Signal	I/O	Definition
1	KBDATA	I/O	Keyboard data
2	NC	N/A	No connection
3	GND	N/A	Signal ground
4	FVcc	N/A	Fused supply voltage
5	KBCLK	I/O	Keyboard clock
6	NC	N/A	No connection
Shell	N/A	N/A	Chassis ground

Mouse Connector

If you reconfigure your hardware, you may need pin number and signal information for the mouse connector. Figure B-4 illustrates the pin numbers for the mouse connector, and Table B-3 defines the pin assignments and interface signals for the mouse connector.



Figure B-4. Pin Numbers for the Mouse Connector

Table B-3. Mouse Connector Pin Assignments

Pin	Signal	I/O	Definition
1	MSDATA	I/O	Mouse data
2	NC	N/A	No connection
3	GND	N/A	Signal ground
4	FVcc	N/A	Fused supply voltage
5	MSCLK	I/O	Mouse clock
6	NC	N/A	No connection
Shell	N/A	N/A	Chassis ground

Video Connector

The system uses a 15-pin high-density D-subminiature connector on a video controller for attaching a video graphics array (VGA)-compatible monitor to your system. The video circuitry on the system board synchronizes the signals that drive the red, green, and blue electron guns in the monitor.

If you reconfigure your hardware, you may need pin number and signal information for the video connector. Figure B-5 illustrates the pin numbers for the video connector, and Table B-4 defines the pin assignments and interface signals for the video connector.

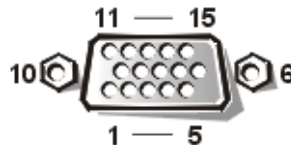


Figure B-5. Pin Numbers for the Video Connector

Table B-4. Video Connector Pin Assignments

Pin	Signal	I/O	Definition
1	RED	O	Red video
2	GREEN	O	Green video
3	BLUE	O	Blue video
4	NC	N/A	No connection
5-8, 10	GND	N/A	Signal ground
9	VCC	N/A	Vcc
11	NC	N/A	No connection
12	DDC data out	O	Monitor detect data
13	HSYNC	O	Horizontal synchronization
14	VSNC	O	Vertical synchronization
15	DDC clock out	O	Monitor detect clock
Shell	N/A	N/A	Chassis ground

USB Connectors

Your system contains two Universal Serial Bus (USB) connectors for attaching USB-compliant devices. USB devices are typically peripherals such as mice, printers, keyboards, and system speakers.

NOTICE: Do not attach a USB device or a combination of USB devices that draw a maximum current over 500 milliamperes (mA) per channel or +5 volts (V). Attaching devices that exceed this threshold may cause the USB ports to shut down. See the documentation that accompanied the USB devices for their maximum current ratings.

If you reconfigure your hardware, you may need pin number and signal information for the USB connectors. Figure B-6 illustrates the USB connector and Table B-5 defines the pin assignments and interface signals for the USB connector.

**Figure B-6. Pin Numbers for the USB Connector**

Table B-5. USB Connector Pin Assignments

Pin	Signal	I/O	Definition
1	Vcc	N/A	Supply voltage
2	DATA	I	Data in
3	+DATA	O	Data out
4	GND	N/A	Signal ground

Integrated Network Interface Controller Connector

Your system has two integrated 10/100-megabit-per-second (Mbps) network interface controllers (NICs). Each NIC provides all the functions of a separate network expansion card and supports both the 10BASE-T and 100BASE-TX Ethernet standards.

Each NIC includes a Wakeup On LAN feature that enables the system to be started by a special local area network (LAN) signal from a server management console. Wakeup On LAN provides remote system setup, software downloading and installation, file updates, and asset tracking after hours and on weekends when LAN traffic is typically at a minimum.

Network Cable Requirements

Your system's RJ45 NIC connectors are designed for attaching an unshielded twisted pair (UTP) Ethernet cable equipped with standard RJ45-compatible plugs. Press one end of the UTP cable into the NIC connector until the plug snaps securely into place. Connect the other end of the cable to an RJ45 jack wall plate or to an RJ45 port on a UTP concentrator or hub, depending on your network configuration. Observe the following cabling restrictions for 10BASE-T and 100BASE-TX networks.

NOTICE: To avoid line interference, voice and data lines must be in separate sheaths.

- For 10BASE-T networks, use Category 3 or greater wiring and connectors.
- For 100BASE-TX networks, use Category 5 or greater wiring and connectors.
- The maximum cable run length (from a workstation to a concentrator) is 328 feet (ft) (100 meters [m]).
- For 10BASE-T networks, the maximum number of daisy-chained concentrators on one network segment is four.

