

HP 3000 and HP 9000 PA-RISC Computer Systems

CE Handbook

Series 9x7 Family, Model 8x7S Family, and Model 800 X Class



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| | |
|-----------|---------------|
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| All | August 1992 |
| All | December 1992 |
| All | December 1993 |

Safety and Regulatory Information

For your protection this product has been tested to various national and international regulations and standards. The scope of this regulatory testing includes electrical/mechanical safety, radio frequency interference, ergonomics, acoustics, and hazardous materials. Where required, approvals obtained from third-party test agencies are shown on the product label. In addition, various regulatory bodies require some information under the following headings.

United Kingdom Telecom Statement (For the United Kingdom Only)

Pursuant to Section 22 of Telecommunications Act of 1984, this product is approved for indirect connection to Public Telecommunications systems within the United Kingdom under the General Approval number NS/G/1234/J/100003.

The following notice is required by the British Approvals Board for Telecoms (BABT). Please contact your HP Sales Office if there are any questions.

Warning



Interconnection directly, or by way of other apparatus, of ports marked with “United Kingdom Safety Warning: Refer to users instructions” with ports marked or not so marked may produce hazardous conditions on the telecom network. Advice should be obtained from a competent engineer before such a connection is made.

To prevent an electrical shock to the operator, disconnect this product from the BT network before the mains plug is removed. Do not hard-wire the BT network connection.

The United Kingdom Safety Warning applies to all ports.

Battery Notice

This product may contain a sealed Lead-Acid and a Lithium battery. Replace only with the same type and part number! Recycle used batteries or send to the following address for proper disposal:

Hewlett Packard
Environmental Health and Safety Dept.
8000 Foothills Blvd.
Roseville, CA 95678

TURVALLISUUSYHTEENVETO

LASERTURVALLISUUS

LUOKAN 1 LASERLAITE KLASS 1 LASER APPARAT

HP 9000 Model 8x7S tietokoneisiin voidaan asentaa muistilaitteeksi laitteensisäinen CD-ROM-levyasema, joka on laserlaite. Tällöin myös päälaitteena toimiva tietokone katsotaan laserlaitteeksi.

Kyseinen CD-ROM-levyasema on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalisissa käytössä levyaseman suojakotelo estää lasersäteen pääsyn laitteen ulkopuolelle.

HP 9000 Model 8x7S-tietokoneet on tyyppi hyväksynyt Suomessa laserturvallisuuden osalta Työsuojeluhallitus, Työsuojeluhallituksen hyväksyntänumero TSH 386/6019/91. Laitteiden turvallisuusluokka on määritetty valtioneuvoston päätöksen N:o 472/1985 ja standardin SFS-IEC 825 mukaisesti.

Tiedot CD-ROM-levyasemassa käytettävän laserdiodin säteilyominaisuuksista:

Aallonpituus 780 nm
Teho 0,4 mW
Luokan 1 laser

TURVALLISUUSYHTEENVETO

LASERTURVALLISUUS

LUOKAN 1 LASERLAITE KLASS 1 LASER APPARAT

HP 9000/800 X Class tietokoneisiin voidaan asentaa muistilaitteeksi laitteensäinen CD-ROM-levyasema, joka on laserlaite. Tällöin myös päälaitteena toimiva tietokone katsotaan laserlaitteeksi.

Kyuseinen CD-ROM-kevyasema on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalisissa käytössä levyaseman suojakotelo estää lasersäteen pääsyn laitteen ulkopuolelle.

HP 9000/800 X Class tietokoneet on tyyppihyväksynyt Suomessa laserturvallisuuden osalta Työsuojeluhallitus, Työsuojeluhallituksen hyväksyntänumero TSH 386/6019/91. Laitteiden turvallisuusluokka on määritetty valituneuvoston päätöksen N:0 472/1985 ja standardin SFS-IEC 825 mukaisesti.

Tiedot CD-ROM-levyasemassa käytettävän laserdiodin säteilyominaisuuksista:

Aallonpituus 780 nm
Teho 0,4 mW
Luokan 1 laser

Safety Considerations

This product and related documentation must be reviewed for familiarization with safety markings and instructions before operation. The following figure shows some of the safety symbols used on the product to indicate various safety considerations.



Instruction manual symbol: the product will be marked with this symbol when it is necessary for the user to refer to the instruction manual in order to protect the product against damage.



Indicates hazardous voltages.



Indicates earth (ground) terminal (sometimes used in manual to indicate circuit common connected to grounded chassis).

Warning



The WARNING sign denotes a hazard. It calls attention to a procedure, practice, of the like, which if not done correctly or adhered to, could result in injury. Do not proceed beyond a WARNING sign until the indicated conditions are fully understood and met.

Caution



The CAUTION sign denotes a hazard. It calls attention to an operating procedure, practice, of the like, which if not done correctly or adhered to, could damage or destroy part or all of the product. Do not proceed beyond a CAUTION sign until the indicated conditions are fully understood and met.

Preface

This edition of the *CE Handbook* contains technical information about HP 3000 Series 9x7 Family, HP 9000 Model 8x7 Family, and HP 9000 Model 800 X Class Computer Systems. At the time of publication, this family included the following models:

| HP 3000 | HP 9000 |
|-------------------------------|----------------------------|
| Series 917LX | Model 807S |
| Series 927LX | Model 817S |
| Series 937LX | Model 827S |
| Series 947LX | Model 837S |
| Series 957LX | Model 847S |
| Series 967LX | Model 857S |
| Series 937 | Model 867S |
| Series 947 | Model 877S |
| Series 957 | Model 887S |
| Series 967 | Model 897S |
| Series 977 | |
| Series 987 | |
| | |
| HP 3000 | HP 9000 |
| Series 917LX | Model 800 F10 |
| Series 927LX | Model 800 F20 |
| Series 937LX | Model 800 F30 |
| Series 937RX | Model 800 G30 |
| Series 937SX | Model 800 G40 |
| Series 947LX | Model 800 G50 |
| Series 947RX | Model 800 G60 |
| Series 947SX | Model 800 G70 ¹ |
| Series 957RX | Model 800 H20 |
| Series 957SX | Model 800 H30 |
| Series 967RX | Model 800 H40 |
| Series 967SX | Model 800 H50 |
| Series 977SX | Model 800 H60 |
| Series 987RX | Model 800 H70 ¹ |
| Series 987SX | Model 800 I30 |
| Series 987/150RX | Model 800 I40 |
| Series 987/150SX | Model 800 I50 |
| Series 987/200RX ¹ | Model 800 I60 |
| Series 987/200SX ¹ | Model 800 I70 ¹ |

¹ Two-way multiprocessor system

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Product Information

General Description

The HP 3000 Series 9x7 Family, HP 9000 Model 8x7S Family, and HP 9000 Model 800 X Class computers are shown in Figure 1-1. The standard chassis is shown on the right. The expanded chassis is shown on the left. The standard chassis systems have two I/O slots. The expanded chassis systems have four configurations - 4, 6, 8 and 12 I/O slots.

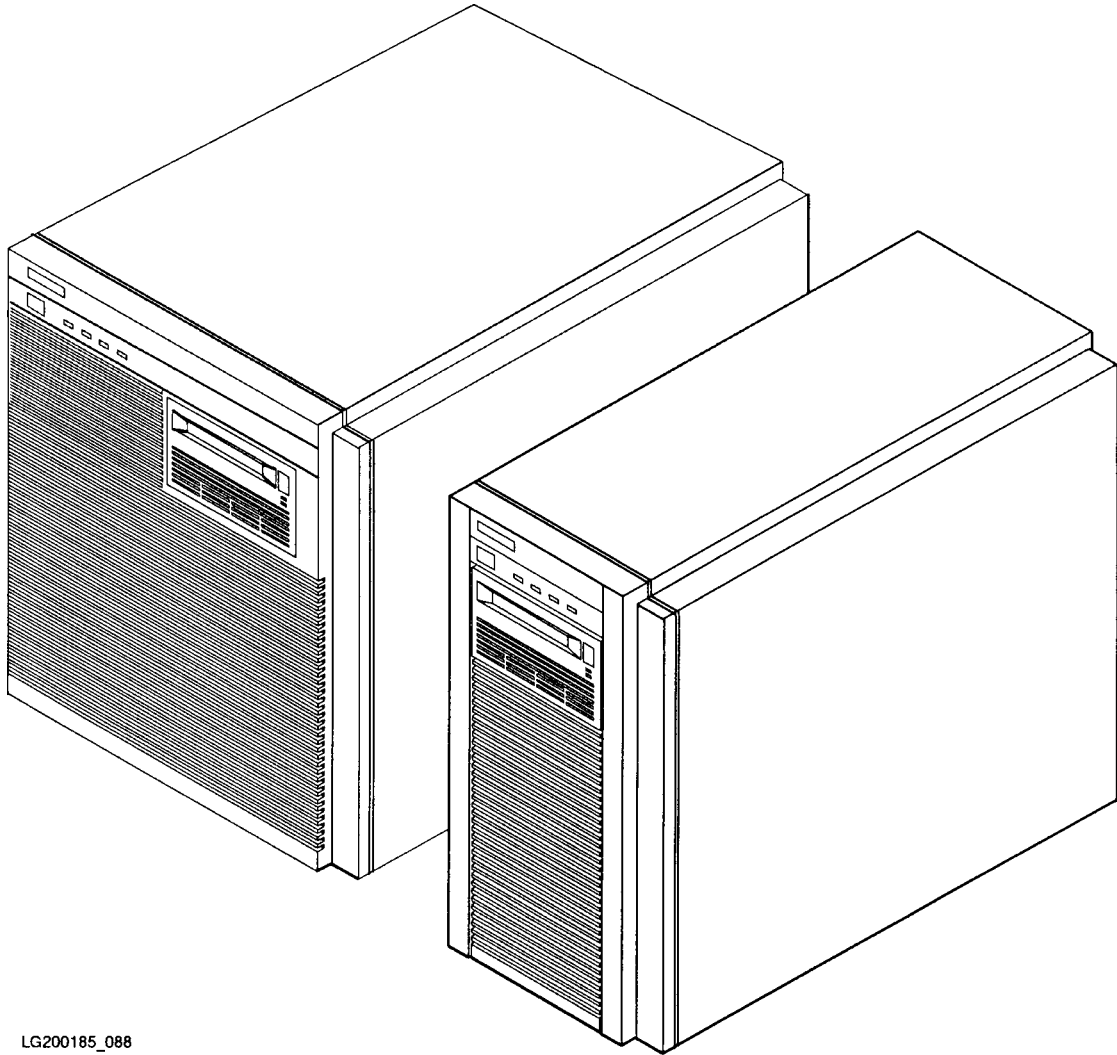
The basic system is made up of a processor PCA, memory, power supply, backplane, Multifunction I/O card, one or more disks, and a DDS-format tape drive. It can include a CD-ROM drive. It can also include a Quarter-inch Cartridge (QIC) tape drive. The electrical and environmental specifications, functional description, and troubleshooting are similar for all models.

HP 3000 9x7 Family models use the MPE-iX operating system. They are summarized in Table 1-1, Table 1-2, and *****<xref HP3BD>: undefined*****.

HP 3000 9x7LX/RX/SX Family models are summarized in Table 1-5, Table 1-6, Table 1-7, Table 1-8, and *****<xref NHP3BD>: undefined*****.

HP 9000 8x7S Family models use the HP-UX operating system. They are summarized in Table 1-3, Table 1-4, and *****<xref HP9BD>: undefined*****.

HP 9000 Model 800 X Class systems are summarized in Table 1-9, Table 1-10, Table 1-11, and *****<xref NHP9BD>: undefined*****.



LG200185_088

Figure 1-1.
HP 3000 Series 9x7 Family, HP 9000 Model 8x7S Family, and HP 9000 Model 800 X Class Systems

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Table 1-1. HP 3000 Series 9x7LX Standard Chassis Description

| HP 3000 | | | | | | |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | Series 917LX | Series 927LX | Series 937LX | Series 947LX | Series 957LX | Series 967LX |
| CPU Type | PCX-S | PCX-S | PCX-S | PCX-S | PCX-S | PCX-S |
| Clock Speed | 32 MHz | 32 MHz | 32 MHz | 32 MHz | 48MHz | 48 MHz |
| Floating Point | option | option | option | option | option | option |
| Data Cache | 64 KB | 64 KB | 64 KB | 64 KB | 64 KB | 256 KB |
| Instruction Cache | 32 KB | 32 KB | 32 KB | 32 KB | 64 KB | 256 KB |
| Main Memory (minimum) | 24 MB | 24 MB | 32 MB | 64 MB | 64 MB | 64 MB |
| Main Memory (maximum) | 192 MB | 192 MB | 192 MB | 192 MB | 192 MB | 192 MB |
| OS Release (minimum) | XL 3.1 | XL 3.1 | XL 3.1 | XL 3.1 | XL 3.1 | XL 3.1 |
| Internal 5.25 in. SCSI Disk(s) | 1 | 1 | 1 | 1 | 1 | 1 |
| Internal 3.5 in. SCSI Disk(s) | 0 | 0 | 0 | 0 | 0 | 0 |
| Internal DDS | 1 | 1 | 1 | 1 | 1 | 1 |
| HP-PB I/O Slots | 2 | 2 | 2 | 2 | 2 | 2 |
| External SCSI Connector | Y | Y | Y | Y | Y | Y |
| Console Connection | Y | Y | Y | Y | Y | Y |
| Remote Modem Connection | Y | Y | Y | Y | Y | Y |
| LAN Connector | Y | Y | Y | Y | Y | Y |
| Internal SCSI I/O Bus | Y | Y | Y | Y | Y | Y |
| Rack Mount Option | Y | Y | Y | Y | Y | Y |
| Customer Installable | Y | Y | Y | N | N | N |

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Table 1-2. HP 3000 Series 9x7 Expanded Chassis Description

| HP 3000 | | | | | | |
|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Series 937 | Series 947 | Series 957 | Series 967 | Series 977 | Series 987 |
| CPU Type | PCX-S | PCX-S | PCX-S | PCX-S | PCX-S | PCX-T |
| Clock Speed | 32 MHz | 32 MHz | 48 MHz | 48 MHz | 64MHz | 96MHz |
| Floating Point | option | option | option | option | option | integrated |
| Data Cache | 64 KB | 64 KB | 64 KB | 256KB | 256KB | 256KB |
| Instruction Cache | 32 KB | 32 KB | 64 KB | 256KB | 256KB | 256KB |
| Main Memory (minimum) | 32 MB | 64 MB | 64 MB | 64 MB | 64 MB | 64 MB |
| Main Memory (maximum) | 192 MB | 192 MB | 192 MB | 192 MB | 384 MB | 384 MB |
| OS Release (minimum) | XL 3.1 | XL 3.1 | XL 3.1 | XL 3.1 | XL 3.1 | iX 4.0 |
| Internal 5.25 in. SCSI Disk(s) | 1 - 3 | 1 - 3 | 1 - 3 | 1 - 3 | 1 - 3 | 1 - 3 |
| Internal 3.5 in. SCSI Disk(s) | 0 | 0 | 0 | 0 | 0 | 0 |
| Internal DDS | 1 | 1 | 1 | 1 | 1 | 1 |
| HP-PB I/O Slots | 12 | 12 | 12 | 12 | 12 | 12 |
| External SCSI Connector | Y | Y | Y | Y | Y | Y |
| Console Connection | Y | Y | Y | Y | Y | Y |
| Remote Modem Connection | Y | Y | Y | Y | Y | Y |
| LAN Connector | Y | Y | Y | Y | Y | Y |
| Internal SCSI I/O Bus | Y | Y | Y | Y | Y | Y |
| Rack Mount Option | Y | Y | Y | Y | Y | Y |
| Customer Installable | N | N | N | N | N | N |

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Table 1-3. HP 9000 Model 8x7S Description

| HP 9000 | | | | | |
|---|----------------|----------------|----------------|----------------|----------------|
| | Model 807S | Model 817S | Model 827S | Model 837S | Model 847S |
| CPU Type | PCX-S | PCX-S | PCX-S | PCX-S | PCX-S |
| Clock Speed | 32 MHz | 48 MHz | 48 MHz | 48 MHz | 48 MHz |
| Floating Point | option | option | option | option | option |
| Data Cache | 64 KB | 64 KB | 64 KB | 256 KB | 256 KB |
| Instruction Cache | 32 KB | 64 KB | 64 KB | 256 KB | 256 KB |
| Main Memory (minimum) | 8 MB | 16 MB | 16 MB | 16 MB | 16 MB |
| Main Memory (maximum) | 64 MB | 192 MB | 192 MB | 192 MB | 192 MB |
| OS Release (minimum) | UX 8.02 | UX 8.02 | UX 8.02 | UX 8.02 | UX 8.02 |
| Internal 5.25 in. SCSI Disk(s)¹ | 0 - 1 | 0 - 1 | 0 - 3 | 0 - 1 | 0 - 3 |
| Internal 3.5 in. SCSI Disk(s)¹ | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 |
| Internal DDS¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| CD-ROM¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| QIC Tape Drive¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| HP-PB I/O Slots | 2 ² | 2 ² | 6 ³ | 2 ² | 6 ³ |
| External SCSI Connector | N | Y | Y | Y | Y |
| External DDC Connector | Y | N | N | N | N |
| Parallel Port | N | Y | Y | Y | Y |
| 8-Port MUX Connector | N | Y | Y | Y | Y |
| Console Connector | Y | N | N | N | N |
| Remote Modem Connector | Y | N | N | N | N |
| Internal SCSI I/O Bus | Y | Y | Y | Y | Y |
| Rack Mount Option | Y | Y | Y | Y | Y |
| Customer Installable | Y | Y | Y | Y | Y |

¹ Represents the maximum number of each device that can be installed. The total number of supported internal peripheral devices depends on the types and quantities of internal peripherals installed.

² Standard Chassis

³ Expanded Chassis

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Table 1-4. HP 9000 Model 8x7S Description

| HP 9000 | | | | | |
|---|-----------------|-----------------|-----------------|----------------|-----------------|
| | Model 857S | Model 867S | Model 877S | Model 887S | Model 897S |
| CPU Type | PCX-S | PCX-S | PCX-S | PCX-T | PCX-T |
| Clock Speed | 48 MHz | 64 MHz | 64 MHz | 96MHz | 96MHz |
| Floating Point | option | option | option | integrated | integrated |
| Data Cache | 256 KB | 256 KB | 256 KB | 256 KB | 256 KB |
| Instruction Cache | 256 KB | 256 KB | 256 KB | 256 KB | 256 KB |
| Main Memory (minimum) | 16 MB | 16 MB | 16 MB | 16 MB | 16 MB |
| Main Memory (maximum) | 192 MB | 192 MB | 384 MB | 384 MB | 384MB |
| OS Release (minimum) | UX 8.02 | UX 8.02 | UX 8.02 | UX 9.0 | UX 9.0 |
| Internal 5.25 in. SCSI Disk(s)¹ | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 |
| Internal 3.5 in. SCSI Disk(s)¹ | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 |
| Internal DDS¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| CD-ROM¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| QIC Tape Drive¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| HP-PB I/O Slots | 12 ² | 12 ² | 12 ² | 6 ² | 12 ² |
| External SCSI Connector | Y | Y | Y | Y | Y |
| External DDC Connector | N | N | N | N | N |
| Parallel Port | Y | Y | Y | Y | Y |
| 8-Port MUX Connector | Y | Y | Y | Y | Y |
| Console Connector | N | N | N | N | N |
| Remote Modem Connector | N | N | N | N | N |
| Internal SCSI I/O Bus | Y | Y | Y | Y | Y |
| Rack Mount Option | Y | Y | Y | Y | Y |
| Customer Installable | Y | Y | Y | Y | Y |

¹ Represents the maximum number of each device that can be installed. The total number of supported internal peripheral devices depends on the types and quantities of internal peripherals installed.

² Expanded Chassis

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Table 1-5. HP 3000 Series 9x7 Chassis Description

| HP 3000 | | | | | |
|---------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | Series 917LX | Series 927LX | Series 937LX | Series 937RX | Series 937SX |
| CPU Type | PCX-S | PCX-S | PCX-S | PCX-S | PCX-S |
| Clock Speed | 32 MHz | 32 MHz | 32 MHz | 32 MHz | 32 MHz |
| Floating Point | option | option | option | option | option |
| Data Cache | 64 KB | 64 KB | 64 KB | 64 KB | 64 KB |
| Instruction Cache | 32 KB | 32 KB | 32 KB | 32 KB | 32 KB |
| Main Memory (minimum) | 32 MB | 32 MB | 32 MB | 32 MB | 32 MB |
| Main Memory (maximum) | 192 MB | 192 MB | 192 MB | 384 MB | 384 MB |
| OS Release (minimum) | iX 4.0 | iX 4.0 | iX 4.0 | iX 4.0 | iX 4.0 |
| Internal 5.25 in. SCSI Disk(s) | 1 | 1 | 1 | 1 | 1 |
| Internal 3.5 in. SCSI Disk(s) | 0 | 0 | 0 | 0 | 0 |
| Internal DDS | 1 | 1 | 1 | 1 | 1 |
| HP-PB I/O Slots | 2 | 2 | 2 | 4 | 12 |
| External SCSI Connector | Y | Y | Y | Y | Y |
| Console Connection | Y | Y | Y | Y | Y |
| Remote Modem Connection | Y | Y | Y | Y | Y |
| LAN Connector | Y | Y | Y | Y | Y |
| Internal SCSI I/O Bus | Y | Y | Y | Y | Y |
| Rack Mount Option | Y | Y | Y | Y | Y |
| Customer Installable | N | N | N | N | N |

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Table 1-6. HP 3000 Series 9x7 Chassis Description

| HP 3000 | | | | | |
|---------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | Series 947LX | Series 947RX | Series 947SX | Series 957RX | Series 957SX |
| CPU Type | PCX-S | PCX-S | PCX-S | PCX-S | PCX-S |
| Clock Speed | 32 MHz | 32 MHz | 32 MHz | 48 MHz | 48 MHz |
| Floating Point | option | option | option | option | option |
| Data Cache | 64 KB | 64 KB | 64 KB | 64KB | 64KB |
| Instruction Cache | 32 KB | 32 KB | 32 KB | 64KB | 64KB |
| Main Memory (minimum) | 64 MB | 64 MB | 64 MB | 64 MB | 64 MB |
| Main Memory (maximum) | 192 MB | 384 MB | 384 MB | 384 MB | 384 MB |
| OS Release (minimum) | iX 4.0 | iX 4.0 | iX 4.0 | iX 4.0 | iX 4.0 |
| Internal 5.25 in. SCSI Disk(s) | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 |
| Internal 3.5 in. SCSI Disk(s) | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 |
| Internal DDS | 1 | 1 | 1 | 1 | 1 |
| HP-PB I/O Slots | 2 | 4 | 12 | 4 | 12 |
| External SCSI Connector | Y | Y | Y | Y | Y |
| Console Connection | Y | Y | Y | Y | Y |
| Remote Modem Connection | Y | Y | Y | Y | Y |
| LAN Connector | Y | Y | Y | Y | Y |
| Internal SCSI I/O Bus | Y | Y | Y | Y | Y |
| Rack Mount Option | Y | Y | Y | Y | Y |
| Customer Installable | N | N | N | N | N |

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Table 1-7. HP 3000 Series 9x7 Chassis Description

| HP 3000 | | | |
|---------------------------------------|-------------------------|-------------------------|-------------------------|
| | Series 967RX | Series 967SX | Series 977SX |
| CPU Type | PCX-S | PCX-S | PCX-S |
| Clock Speed | 48 MHz | 48 MHz | 64 MHz |
| Floating Point | option | option | option |
| Data Cache | 256 KB | 256 KB | 256 KB |
| Instruction Cache | 256 KB | 256 KB | 256 KB |
| Main Memory (minimum) | 64 MB | 64 MB | 64 MB |
| Main Memory (maximum) | 512 MB | 512 MB | 768 MB |
| OS Release (minimum) | iX 4.0 | iX 4.0 | iX 4.0 |
| Internal 5.25 in. SCSI Disk(s) | 0 - 3 | 0 - 3 | 0 - 3 |
| Internal 3.5 in. SCSI Disk(s) | 0 - 2 | 0 - 2 | 0 - 2 |
| Internal DDS | 1 | 1 | 1 |
| HP-PB I/O Slots | 4 | 12 | 12 |
| External SCSI Connector | Y | Y | Y |
| Console Connection | Y | Y | Y |
| Remote Modem Connection | Y | Y | Y |
| LAN Connector | Y | Y | Y |
| Internal SCSI I/O Bus | Y | Y | Y |
| Rack Mount Option | Y | Y | Y |
| Customer Installable | N | N | N |

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Table 1-8. HP 3000 Series 9x7 Chassis Description

| HP 3000 | | | | | | |
|---------------------------------------|-------------------------|-------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | Series 987RX | Series 987SX | Series 987/150RX | Series 987/150SX | Series 987/200RX | Series 987/200SX |
| CPU Type | PCX-T | PCX-T | PCX-T | PCX-T | PCX-T | PCX-T |
| Clock Speed | 96 MHz | 96 MHz | 96 MHz | 96 MHz | 96 MHzMP | 96 MHzMP |
| Floating Point | integrated | integrated | integrated | integrated | integrated | integrated |
| Data Cache | 256 KB | 256 KB | 1 MB | 1 MB | 1 MB ¹ | 1 MB ¹ |
| Instruction Cache | 256 KB | 256 KB | 1 MB | 1 MB | 1 MB ¹ | 1 MB ¹ |
| Main Memory (minimum) | 64 MB | 64 MB | 64 MB | 64 MB | 64 MB | 64 MB |
| Main Memory (maximum) | 512 MB | 512 MB | 768 MB | 768 MB | 768 MB | 768 MB |
| OS Release (minimum) | iX 4.0 | iX 4.0 | iX 4.0 ² | iX 4.0 ² | iX 4.7 | iX 4.7 |
| Internal 5.25 in. SCSI Disk(s) | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 |
| Internal 3.5 in. SCSI Disk(s) | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 |
| Internal DDS | 1 | 1 | 1 | 1 | 1 | 1 |
| HP-PB I/O Slots | 4 | 12 | 12 | 12 | 12 | 12 |
| External SCSI Connector | Y | Y | Y | Y | Y | Y |
| Console Connection | Y | Y | Y | Y | Y | Y |
| Remote Modem Connection | Y | Y | Y | Y | Y | Y |
| LAN Connector | Y | Y | Y | Y | Y | Y |
| Internal SCSI I/O Bus | Y | Y | Y | Y | Y | Y |
| Rack Mount Option | Y | Y | Y | Y | Y | Y |
| Customer Installable | N | N | N | N | N | N |

¹ 1 MB per processor

² with patch

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Table 1-9. HP 9000 Series 800 Description

| HP 9000 Series 800 | | | | | | | | |
|---|---------|---------|---------|---------|---------|------------|------------|------------|
| | F10 | F20 | F30 | G30 | G40 | G50 | G60 | G70 |
| CPU Type | PCX-S | PCX-S | PCX-S | PCX-S | PCX-S | PCX-T | PCX-T | PCX-T |
| Clock Speed | 32 MHz | 48 MHz | 48 MHz | 48 MHz | 64 MHz | 96 MHz | 96MHz | 96MHzMP |
| Floating Point | option | option | option | option | option | integrated | integrated | integrated |
| Data Cache | 64 KB | 64 KB | 256 KB | 256 KB | 256 KB | 256 KB | 1 MB | 1MB |
| Instruction Cache | 32 KB | 64 KB | 256 KB | 256 KB | 256 KB | 256 KB | 1 MB | 1 MB |
| Main Memory (minimum) | 16 MB | 16 MB | 16 MB | 32 MB | 32 MB | 32 MB | 32 MB | 32 MB |
| Main Memory (maximum) | 384 MB | 384 MB | 384 MB | 384 MB | 384 MB | 768 MB | 768 MB | 768 MB |
| OS Release (minimum) | UX 8.02 | UX 8.02 | UX 8.02 | UX 8.02 | UX 8.02 | UX 8.02 | UX 9.0 | UX 9.0 |
| Internal 5.25 in. SCSI Disk(s) ¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 4 | 0 - 4 | 0 - 4 | 0 - 4 | 0 - 4 |
| Internal 3.5 in. SCSI Disk(s) ¹ | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 | 0 - 2 |
| Internal DDS ¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| CD-ROM ¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| QIC Tape Drive ¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| 8mm Tape Drive ¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| HP-PB I/O Slots | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 4 |
| External SCSI Connector | Y | Y | Y | Y | Y | Y | Y | Y |
| External DDC Connector | N | N | N | N | N | N | N | N |
| Parallel Port | Y | Y | Y | Y | Y | Y | Y | Y |
| 8-Port MUX Connector | Y | Y | Y | Y | Y | Y | Y | Y |
| Console Connector | N | N | N | N | N | N | N | N |
| Remote Modem Connector | N | N | N | N | N | N | N | N |
| Internal SCSI I/O Bus | Y | Y | Y | Y | Y | Y | Y | Y |
| Rack Mount Option | Y | Y | Y | Y | Y | Y | Y | Y |
| Customer Installable | Y | Y | Y | Y | Y | Y | Y | Y |

¹ Represents the maximum number of each device that can be installed. The total number of supported internal peripheral devices depends on the types and quantities of internal peripherals installed.

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Table 1-10. HP 9000 Series 800 Description

| HP 9000 Series 800 | | | | | | |
|---|------------|------------|------------|------------|------------|------------|
| | H20 | H30 | H40 | H50 | H60 | H70 |
| CPU Type | PCX-S | PCX-S | PCX-S | PCX-T | PCX-T | PCX-T |
| Clock Speed | 48 MHz | 48 MHz | 64 MHz | 96 MHz | 96MHz | 96MHzMP |
| Floating Point | option | option | option | integrated | integrated | integrated |
| Data Cache | 64 KB | 256 KB | 256 KB | 256 KB | 1 MB | 1 MB |
| Instruction Cache | 64 KB | 256 KB | 256 KB | 256 KB | 1 MB | 1 MB |
| Main Memory (minimum) | 64 MB | 64 MB | 64 MB | 64 MB | 64 MB | 64 MB |
| Main Memory (maximum) | 384 MB | 384 MB | 384 MB | 768 MB | 768 MB | 768 MB |
| OS Release (minimum) | UX 8.02 | UX 8.02 | UX 8.02 | UX 8.02 | UX 9.0 | UX 9.0 |
| Internal 5.25 in. SCSI Disk(s)¹ | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 |
| Internal 3.5 in. SCSI Disk(s)¹ | 0 - 4 | 0 - 4 | 0 - 4 | 0 - 4 | 0 - 4 | 0 - 4 |
| Internal DDS¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| CD-ROM¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| QIC Tape Drive¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| 8mm Tape Drive¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| HP-PB I/O Slots | 8 | 8 | 8 | 8 | 8 | 8 |
| External SCSI Connector | Y | Y | Y | Y | Y | Y |
| External DDC Connector | N | N | N | N | N | N |
| Parallel Port | Y | Y | Y | Y | Y | Y |
| 8-Port MUX Connector | Y | Y | Y | Y | Y | Y |
| Console Connector | N | N | N | N | N | N |
| Remote Modem Connector | N | N | N | N | N | N |
| Internal SCSI I/O Bus | Y | Y | Y | Y | Y | Y |
| Rack Mount Option | Y | Y | Y | Y | Y | Y |
| Customer Installable | Y | Y | Y | Y | Y | Y |

¹ Represents the maximum number of each device that can be installed. The total number of supported internal peripheral devices depends on the types and quantities of internal peripherals installed.

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Table 1-11. HP 9000 Series 800 Description

| HP 9000 Series 800 | | | | | |
|---|------------|------------|------------|------------|------------|
| | I30 | I40 | I50 | I60 | I70 |
| CPU Type | PCX-S | PCX-S | PCX-T | PCX-T | PCX-T |
| Clock Speed | 48 MHz | 64 MHz | 96 MHz | 96MHz | 96MHzMP |
| Floating Point | option | option | integrated | integrated | integrated |
| Data Cache | 256 KB | 256 KB | 256 KB | 1 MB | 1 MB |
| Instruction Cache | 256 KB | 256 KB | 256 KB | 1 MB | 1 MB |
| Main Memory (minimum) | 64 MB | 64 MB | 64 MB | 64 MB | 64 MB |
| Main Memory (maximum) | 384 MB | 384 MB | 768 MB | 768 MB | 768 MB |
| OS Release (minimum) | UX 8.02 | UX 8.02 | UX 8.02 | UX 9.0 | UX 9.0 |
| Internal 5.25 in. SCSI Disk(s)¹ | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 | 0 - 3 |
| Internal 3.5 in. SCSI Disk(s)¹ | 0 - 4 | 0 - 4 | 0 - 4 | 0 - 4 | 0 - 4 |
| Internal DDS¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| CD-ROM¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| QIC Tape Drive¹ | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 | 0 - 1 |
| HP-PB I/O Slots | 12 | 12 | 12 | 12 | 12 |
| External SCSI Connector | Y | Y | Y | Y | Y |
| External DDC Connector | N | N | N | N | N |
| Parallel Port | Y | Y | Y | Y | Y |
| 8-Port MUX Connector | Y | Y | Y | Y | Y |
| Console Connector | N | N | N | N | N |
| Remote Modem Connector | N | N | N | N | N |
| Internal SCSI I/O Bus | Y | Y | Y | Y | Y |
| Rack Mount Option | Y | Y | Y | Y | Y |
| Customer Installable | Y | Y | Y | Y | Y |

¹ Represents the maximum number of each device that can be installed. The total number of supported internal peripheral devices depends on the types and quantities of internal peripherals installed.

Major Assemblies

Figure 1-2 and Figure 1-3 show the major assemblies in the standard chassis. The figures and the list of major assemblies represent a generalized system and do not represent any one system.

The major assemblies are:

- Digital Data Storage (DDS) Device
- Peripheral Drawer
- Power Supply and Fan
- Multifunction I/O Card (system dependent)
- Processor Card
- Memory Subsystem

The peripheral drawer contains the DDS and one 5.25-inch internal disk or one to two 3.5-inch disks.

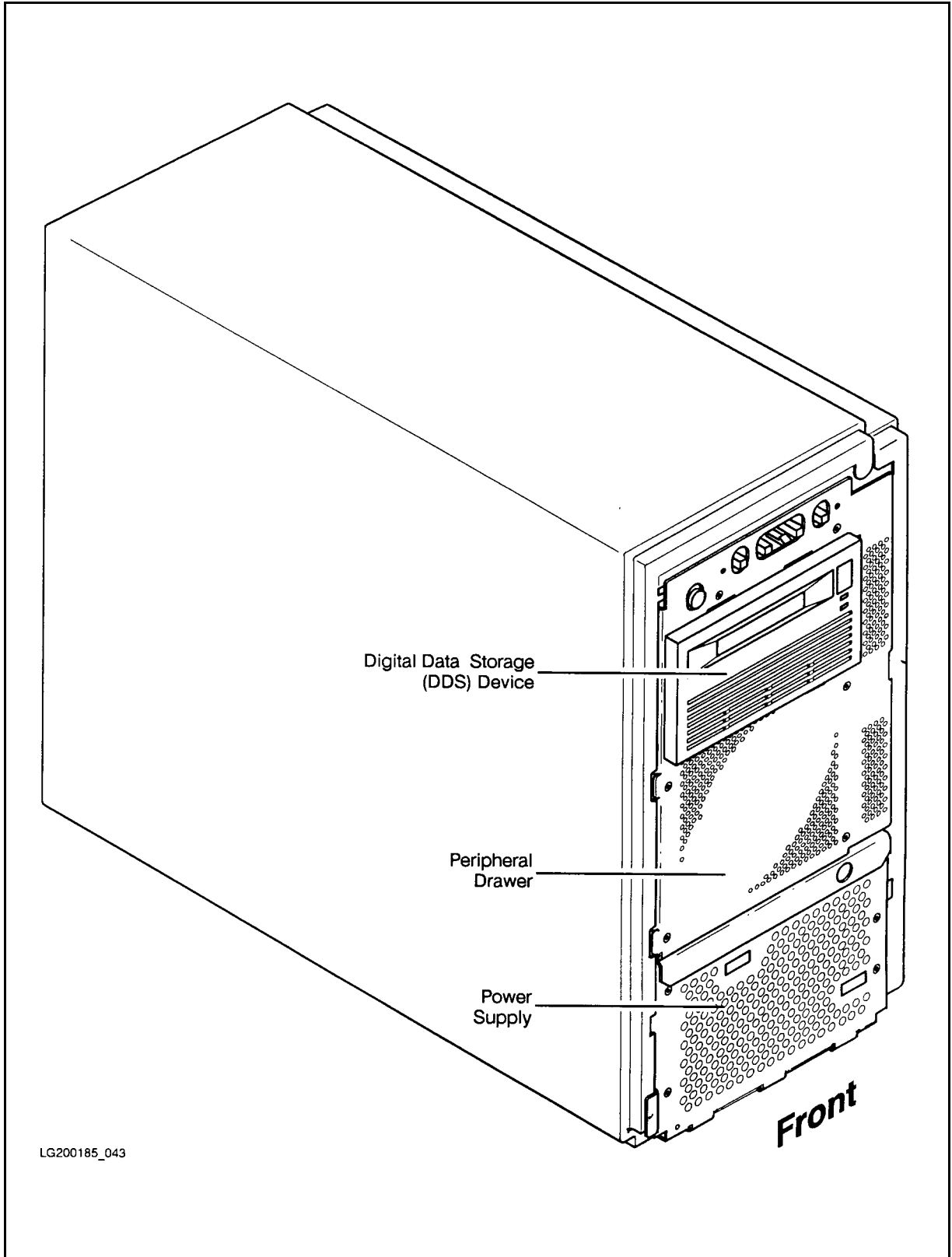


Figure 1-2. Standard Chassis Major Assemblies - Front

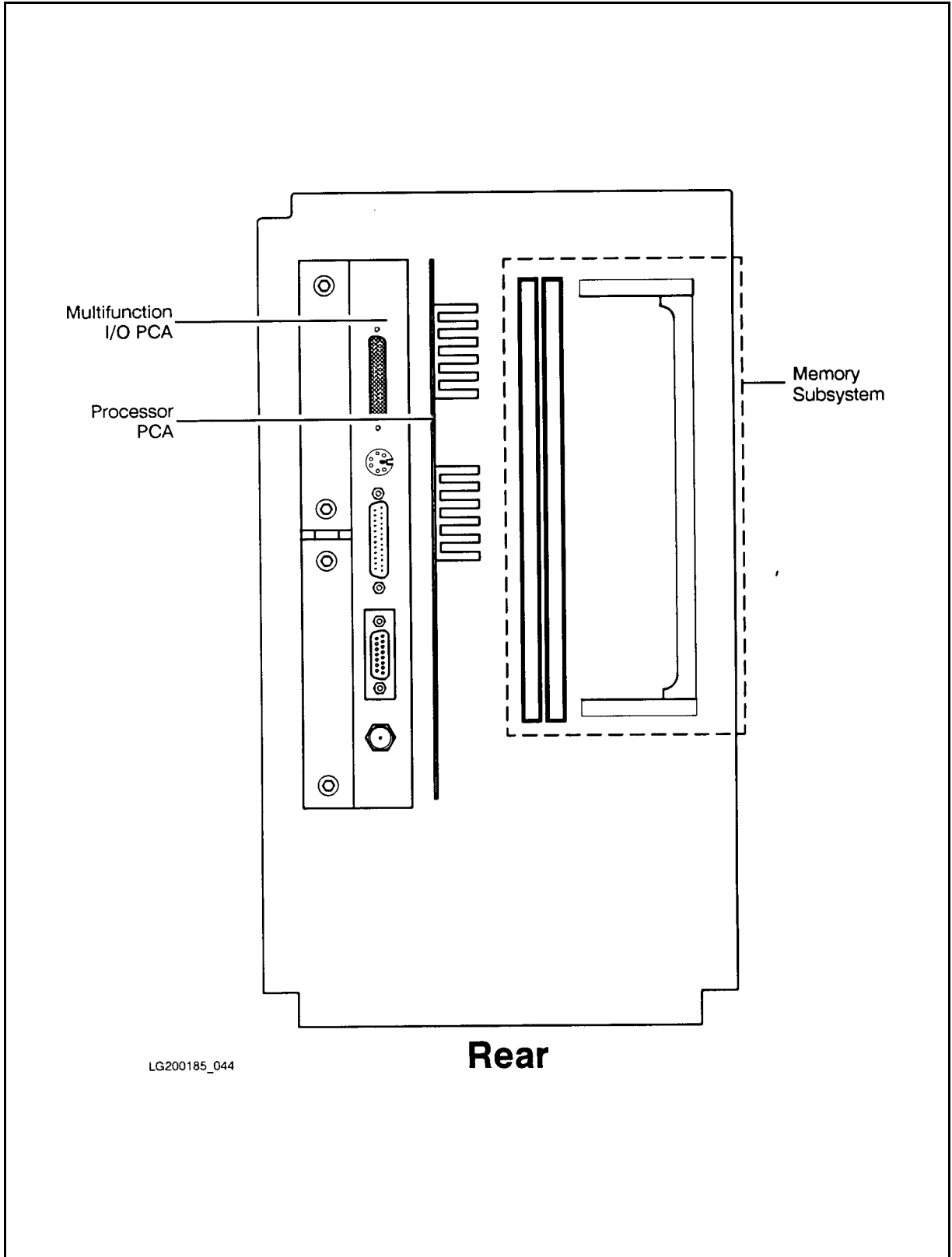


Figure 1-3. Standard Chassis Major Assemblies - Rear

Multifunction I/O Card Connection

Each of the systems has a special I/O slot reserved for a Multifunction I/O card. The card provides connections for internal and external I/O devices. Figure 1-4 shows the external connectors for each of the three versions.

The **SCSI/Console/LAN** card, P/N A1703-60003, is used in the HP 3000 systems.

The **SCSI/Parallel/APMUX** cards, P/N A1703-60004 and P/N A1703-60022, are used in all HP 9000 systems, except the HP 9000/807S.

The **SCSI/APMUX** card, P/N A1751-60001, is used only in the HP 9000/807S system.

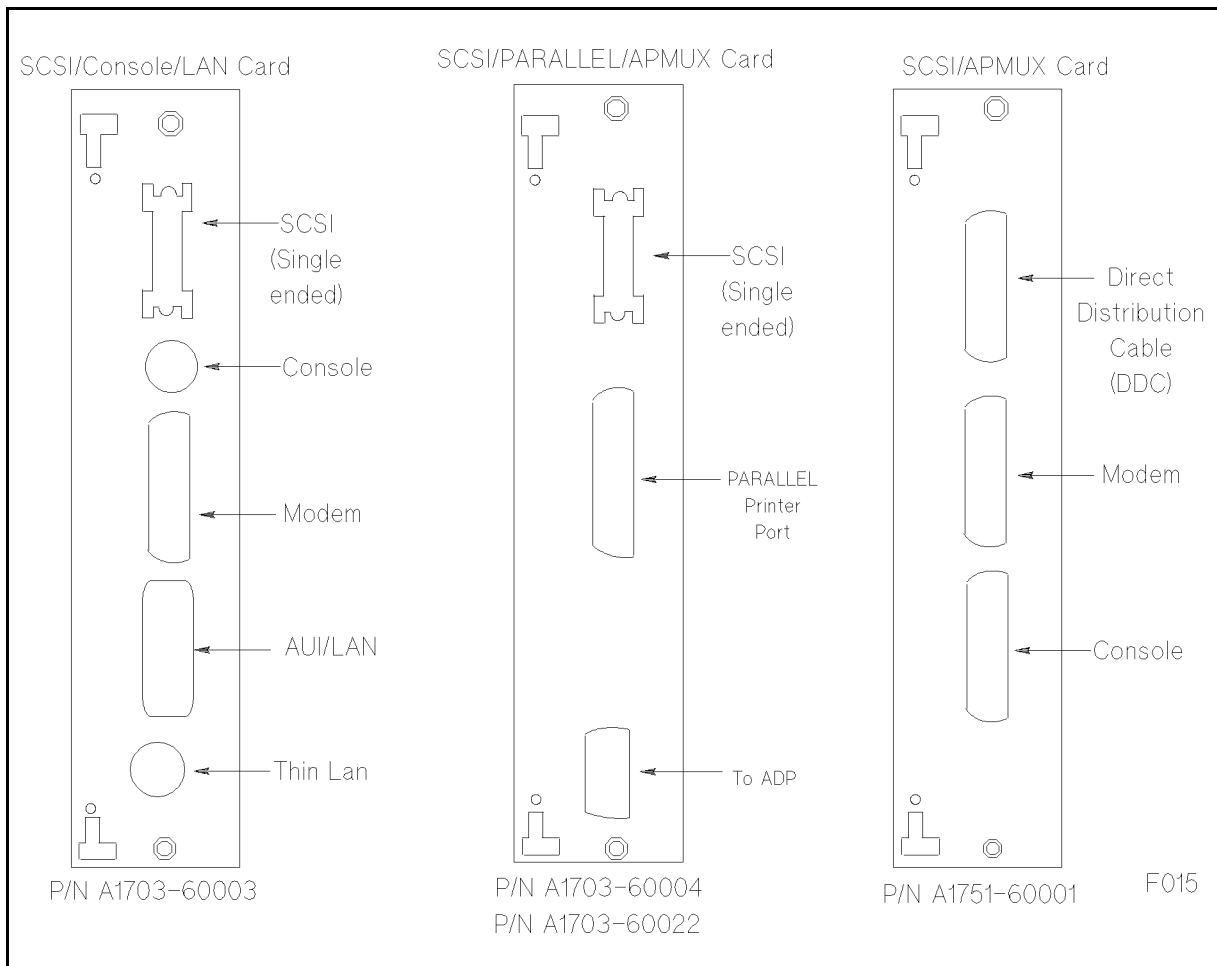


Figure 1-4. Multifunction I/O Card Connector Layout

System Operation

Introduction

The status of system operation is displayed on the system front panel and on the console. Tape drive operation is displayed on the tape drive front panel. System operation can be controlled and modified with the Processor Dependent Commands (PDC) and the Access Port commands.

System Status Displays

System Front Panel and Status Displays

The system front panel switch and indicators are shown in Figure 1-5. The DC ON/OFF switch controls the application of DC power to the system. Table 1-12 shows the valid states of the Operating State indicators.

The Remote Indicator is lit if the system remote console path has been enabled.

If the Operating State Indicators show a Fault condition and the Battery Indicator is lit, the battery is discharging.

If the Operating State Indicators do not show a Fault condition and the Battery indicator is lit, the battery is charging.

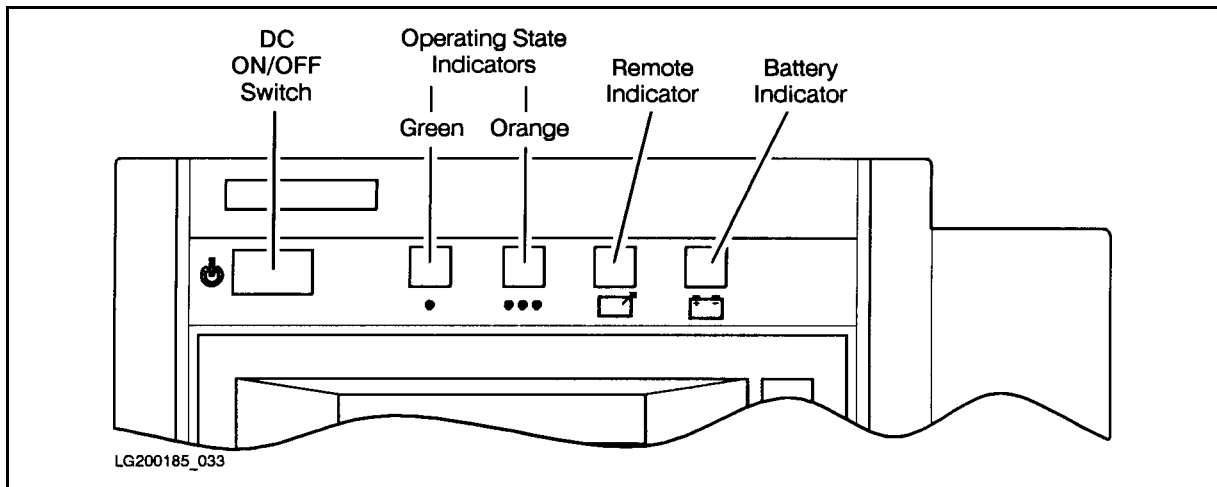


Figure 1-5. System Front Panel Switches and Indicators

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Table 1-12. Operating State Indicators

| Green Run LED | Orange Fault LED | OSTAT Display | System State |
|------------------|---------------------|-------------------|--|
| Off | Off | OFF | The system is shut down and power is off. ¹ |
| Off | On | FauLT | The system is in a fault state and halted. |
| On | Off | RUN | Normal system operation. |
| On | On | TEST | The system is executing selftest. |
| On | On | INITialize | The system is initializing. |
| On | On | SHUTdown | The operating system is being shut down. |
| On | On | WARNing | This is a warning state. |
| On | On | ALL on | Normal system operation. |

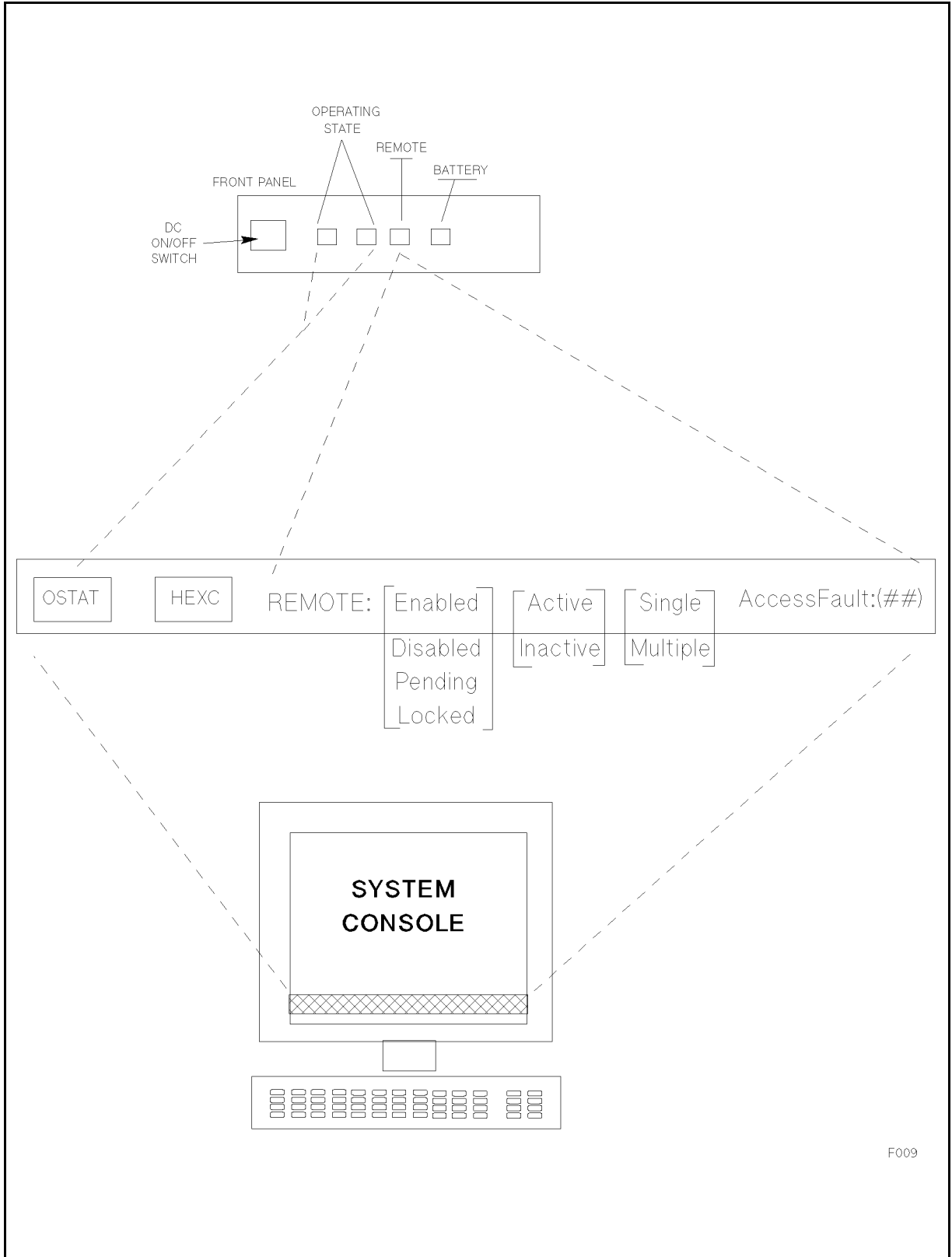
Note



¹ Early versions of MPE/iX will turn off the Operating State Indicators if an OS Shutdown is performed.

Figure 1-6 shows how the front panel indicators are related to the fields of the system console banner. The OSTAT field contains the alphabetic characters shown in the OSTAT Display field of Table 1-12.

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F009

Figure 1-6. Front Panel and System Console Indicators

Removable Media Devices

DDS Front Panels and Status Displays

The tape drives in the HP 3000/9x7, HP 9000/8x7S, and HP 9000 800 X Class systems are shown in Figure 1-7 and Figure 1-8.

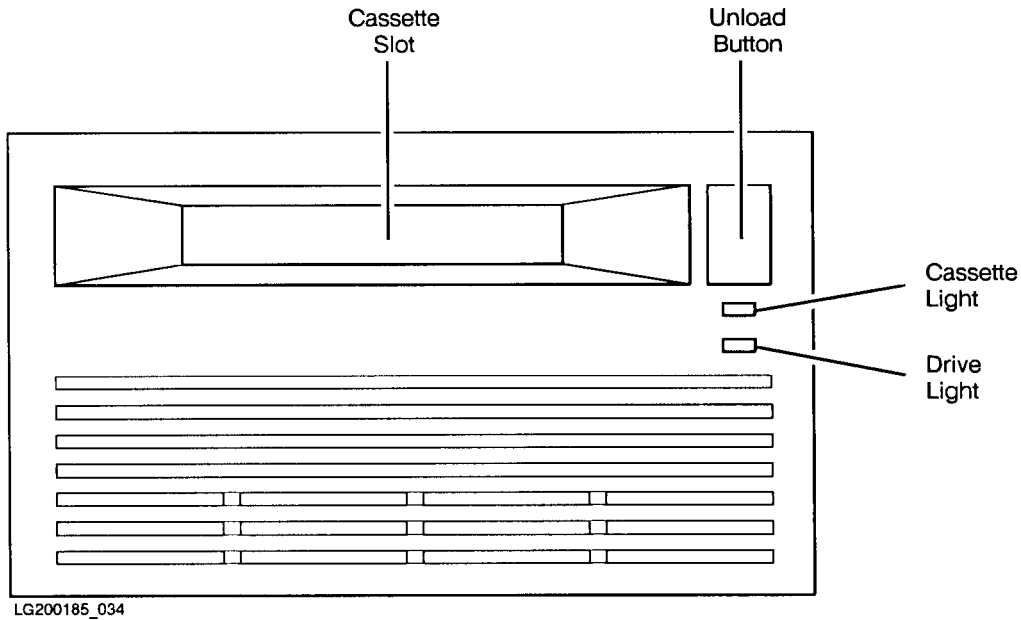


Figure 1-7. HP C1502A 5.25-inch DDS-Format Tape Drive Front Panel

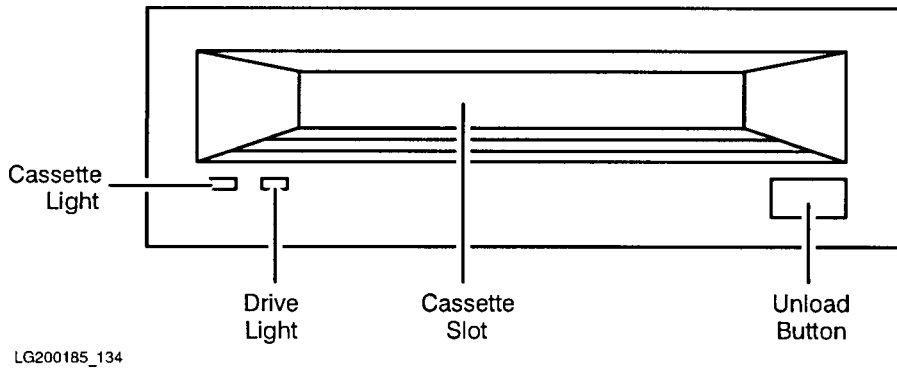


Figure 1-8. HP C1503B and C1504B 3.5-inch DDS-Format Tape Drive Front Panel

Cassette Slot: is where the tape cassette is inserted and removed.

Unload Button: stops any tape operation, rewinds the tape, and ejects the cassette from the tape drive.

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Cassette Light and Drive Light: indicate the status of the tape drive. Both lights are capable of displaying yellow or green colors. The combinations of colors plus being off (no light) show normal operation status, operation with write protect, and caution states, as listed below.

The various status states you will see the indicators display are shown in the following tables. Table 1-13 is for the 5.25 inch tape drive, and Table 1-14 is for the 3.5 inch tape drive.

The Cassette indicator and the Drive indicator are bi-color Light Emitting Diodes (LEDs). They can show green or yellow light.

Table 1-13. HP C1502A 5.25-inch DDS-Format Tape Drive

| Cassette Light | Drive Light | Condition |
|---|---------------|---|
| Normal Operation | | |
| Off | Off | No cassette loaded or power is off. |
| Off | Flash Green | No cassette loaded, tape drive is active. |
| Pulsing Green | Pulsing Green | Cassette is loading or unloading, tape drive is active. |
| On Green | Off | Cassette is loaded, tape drive is offline. |
| On Green | Flash Green | Cassette is loaded, tape drive is active. |
| On Green | On Green | Cassette is loaded, tape drive is online. |
| Normal Operation With A Read Only Tape | | |
| Pulsing Yellow | Pulsing Green | Cassette is loading and is read only, tape drive is loading or unloading. |
| On Yellow | Off | Cassette is loaded as a read only tape, tape drive is offline. |
| On Yellow | Flash Green | Cassette is loaded as a read only tape, tape drive is active. |
| On Yellow | On Green | Cassette is loaded as a read only tape, tape drive is online. |
| Caution States | | |
| On Green 4.5 sec, Off 0.5 sec | Off | Caution Signal. |
| On Yellow | On Yellow | High humidity, moisture detected by tape drive., (Too high) |
| Flash Yellow | Flash Yellow | Running Selftest |

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Table 1-14. HP C1503B and C1504B 3.5 inch DDS-Format Tape Drive

| Cassette Light | Drive Light | Condition |
|-----------------------------|--------------------|--|
| No Cassette States | | |
| Off | Off | No cassette loaded or power is off. |
| Flash Yellow | Flash Yellow | Self-test in progress. |
| Off | Flash Green | No cassette, tape drive is active. |
| Write Enable States | | |
| On Green | On Green | Cassette loaded, tape drive online. |
| On Green | Flash Green | Cassette loaded, tape drive active. |
| Pulse Green | Pulse Green | Loading, unloading, or ejecting cassette. |
| On Green | Off | Tape drive offline. Cassette loaded. |
| Write Protect States | | |
| On Yellow | On Green | Read only cassette loaded, tape drive online. |
| On Yellow | Flash Green | Read only cassette loaded, tape drive active. |
| Pulse Yellow | Pulse Green | Loading, unloading, or ejecting cassette. |
| On Yellow | Off | Tape drive offline. Read-only cassette loaded. |
| Error States | | |
| On Green | Pulse Green/Yellow | Caution ¹ (media warning). |
| On Yellow | On Yellow | Moisture detected or no termination resistors ² . |
| Pulse Yellow | On Yellow | Fault ³ . |

¹ This occurs during writes where an excessive number of read after write errors occur and during reads where an excessive level of C3 correction being applied. This indication would persist until the cassette is unloaded.

² The termination resistor problem would only occur at power on time and the tape drive will appear to have *hung* during self-test.

³ Indicates a failure of the DDS Field Replaceable Unit.

Ordering HP DDS cassettes

The 60 meter cassette tape, product number *HP 92283A*, can hold up to 1.3 gigabytes (1300 megabytes) of data. They are packaged in a red box of 5 cassettes. Use the 60 meter cassettes in either the full height (5.25 inch) DDS tape drive, or the half height (3.5 inch) DDS tape drive.

The 90 meter cassette tape, product number *HP 92283B*, can hold up to 2 gigabytes (2000 megabytes) of data and are packaged in yellow. Use the 90 meter cassettes only in the half height (3.5 inch) DDS tape drive.

The cleaning cassette tape is product number *HP 92283K*.

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Table 1-15 shows the types of DDS tapes available and which tape drive they are compatible with. This is important to know before loading a DDS cassette into a tape drive for operation.

Table 1-15. DDS Tape Requirements

| | HP 5.25 inch | HP 3.5 inch | Non-HP DDS Device |
|--------------|---------------------------|---------------------------|------------------------------|
| 60M (red) | Read (yes) Write (yes) | Read (yes) Write (yes) | Read (yes) Write (yes) |
| 90M (yellow) | Read (no) Write (no) | Read (yes) Write (yes) | Read (*) Write (*) |

* Refer to the manufactures specification.

CD-ROM Front Panel and Status Displays

Figure 1-9 shows the CD-ROM controls and indicators.

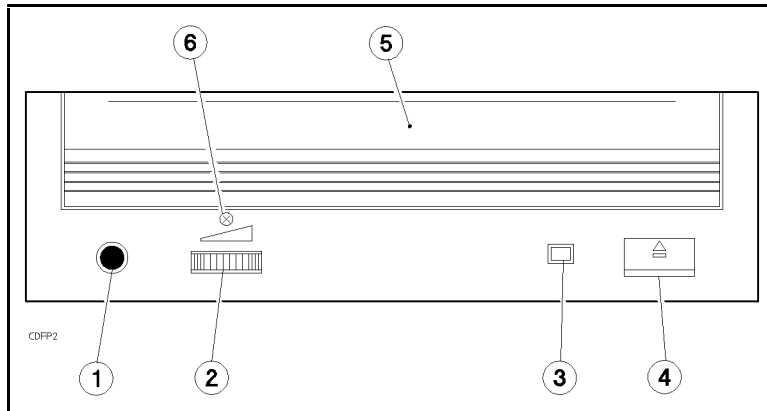


Figure 1-9. CD-ROM Drive Front Panel

- | | |
|------------------------|--|
| 1. Headphone Jack | 4. CD-ROM Eject Button ¹ |
| 2. Volume Control Knob | 5. Door (CD-ROM Caddy Loading Slot) |
| 3. Drive Status Light | 6. Emergency Eject Access ² |

¹Ejects a CD-ROM within 5 seconds; will not function if there is no power or if a software application has disabled operations

²To eject a CD-ROM when drive power is off, remove screw and insert the end of a paper clip into this hole.

Table 1-16 shows drive status light indications during normal operation and fault conditions.

Table 1-16. Drive Status Light Indications

| Status | Explanation |
|----------|--|
| ON | No CD-ROM detected, CD-ROM insertion error detected, or no CD-ROM is in the caddy. |
| OFF | Drive power is off, self-test passed, or no activity with the host. |
| FLASHING | Activity with the host. |

Quarter-Inch Cartridge (QIC) Tape Drive Front Panel and Status Displays

Figure 1-10 shows the QIC tape drive front panel and indicator.

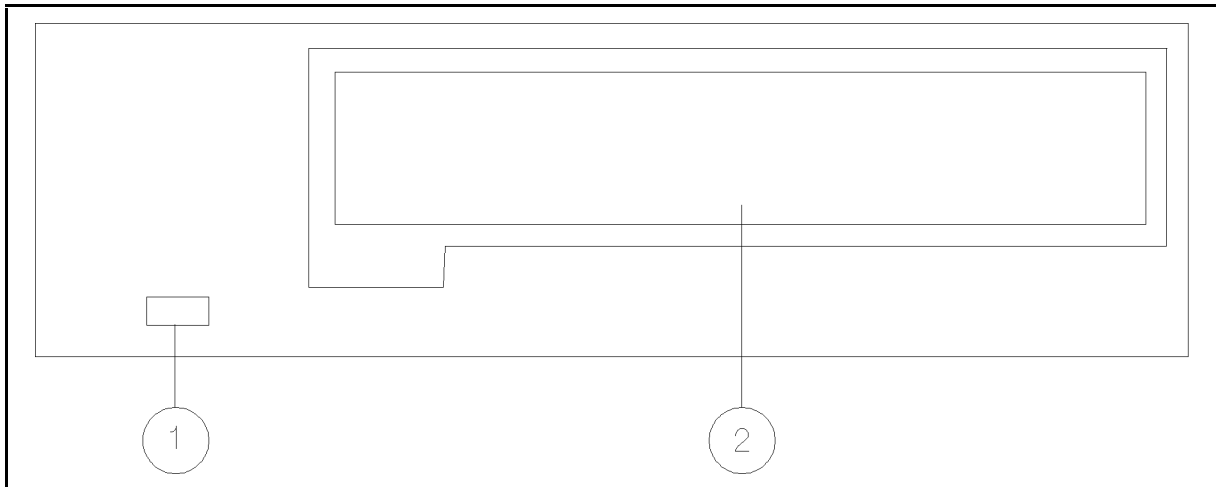


Figure 1-10. Quarter-Inch Cartridge (QIC) Tape Drive Front Panel

1. Drive Activity Light 2. Tape Access Door

Drive Activity Light: is lit when the drive is being accessed, such as when the motor is running, when the heads are being positioned, when a command is being executed, and when data is being transferred.

The QIC drive can store up to 1.2 Gbytes, depending upon the QIC format in which the data is written and which cartridge type is used. Refer to Table 1-17. The QIC drive reads and writes the formats shown in Table 1-18.

Table 1-17. QIC Tape Cartridge Compatibility

| Tape | Write | Read |
|--------|---------------------------|-----------------------------------|
| 1.2 GB | QIC-1000C | QIC-1000C |
| 1.0 GB | QIC-1000C | QIC-1000C |
| 525 MB | QIC-525, QIC-150, QIC-120 | QIC-525, QIC-150, QIC-120, QIC-24 |
| 320 MB | QIC-525, QIC-150, QIC-120 | QIC-525, QIC-150, QIC-120, QIC-24 |
| 250 MB | QIC-150, QIC-120 | QIC-525, QIC-150, QIC-120, QIC-24 |
| 150 MB | QIC-150, QIC-120 | QIC-150, QIC-120, QIC-24 |
| 60 MB | QIC-120 | QIC-120, QIC-24 |
| 45 MB | N/A | QIC-24 |

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Table 1-18. QIC Tape Drive Read and Write Formats

| Read | Write |
|----------|----------|
| QIC 24 | |
| QIC 120 | QIC 120 |
| QIC 150 | QIC 150 |
| QIC 525 | QIC 525 |
| QIC 1000 | QIC 1000 |

The drive reads tapes by sensing the previously written format and by sensing the cartridge type. The drive writes a tape in a particular QIC format only if the cartridge supports recording that format. For example, a QIC 525 tape can be written with a QIC 150 format or a QIC 525 format. However, a tape written in the QIC 1000 format only supports the QIC 1000 format.

You specify the format to be written through specific device files.

Use the following command to determine the available QIC special device files:

```
>ll /dev/rmt/&<LU>qic
```

where <LU> is the logical unit number of the tape drive.

Although QIC tapes support multiple QIC formats, you cannot write data on a tape in more than one format. For example, a QIC 525 tape supports both the QIC 150 and QIC 525 formats. However, you must either write data in the QIC 150 format or the QIC 525 format. The 1.2GB tapes can only be written in the QIC 1000 format. If a cartridge has data recorded in a particular format, it can be overwritten with a different format.

ALL HP-supplied QIC backup media, such as the Install Tape, Update/SE Tape, User Enhancement Environment Tape, and Support Tape will be in the QIC 1000 format.

Note

The QIC drive is **NOT** compatible with the 914x drives. You should not load a QIC tape into a 914x tape drive, or vice versa.

Floppy Disk Drive

Figure 1-11 shows the front panel and controls of the floppy disk drive. Table 1-19 describes the front panel. The Drive Activity light is lit when data is being transferred to or from the disk.

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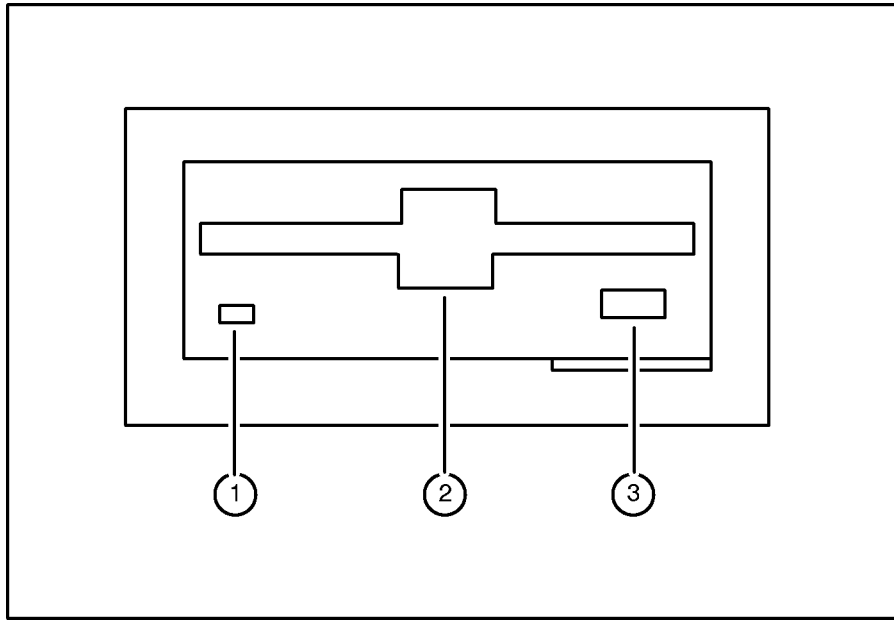


Figure 1-11. Floppy Disk Drive Front Panel

Table 1-19. Floppy Disk Drive Front Panel

| Callout | Component |
|---------|----------------------|
| 1 | Drive Activity Light |
| 2 | Disk Slot |
| 3 | Disk Eject Button |

8mm Tape Drive

Figure 1-12 shows the front panel of the 8mm tape drive.

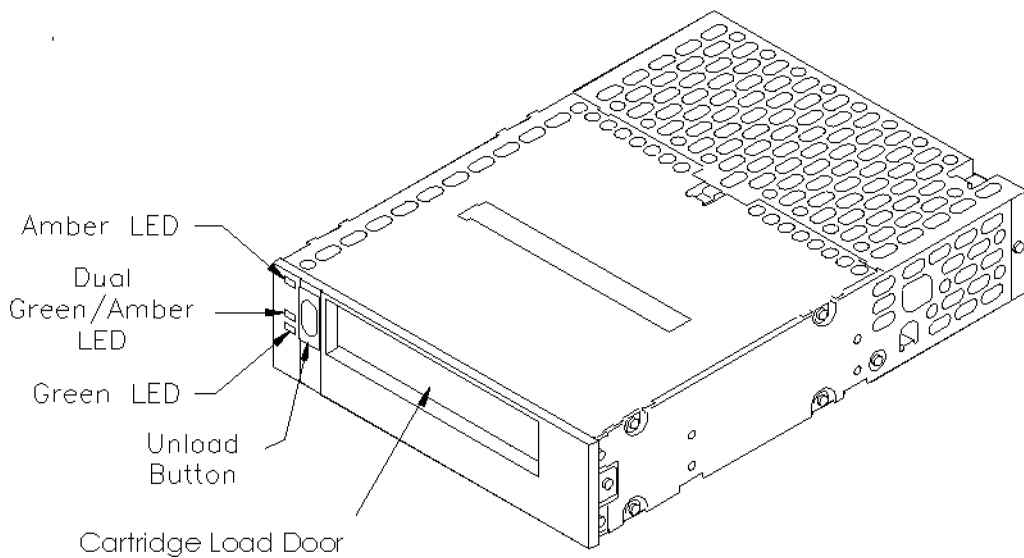


Figure 1-12. 8mm Tape Drive Front Panel

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The LEDs show the state of the tape device.

- If the top (amber) LED flashes, the device has an error or needs to be cleaned.
- If the middle LED flashes, SCSI bus activity is occurring.
 - If the LED is amber, the tape loaded is in compressed format.
 - If the LED is green, the tape loaded is in uncompressed format.
- If the bottom LED flashes, normal tape operation is occurring.

Table 1-20 provides a detailed description of the device LED states.

Note



The UNLOAD button can also be used to clear servo and other errors. If a hardware error or servo error occurs, press the UNLOAD button to reset the drive. Then, if necessary, wait a few seconds and press the button again to eject the tape.

Table 1-20. 8mm Tape Drive Front Panel LED States

| Top (Amber) LED | Middle (Green/Amber) LED | Bottom (Green) LED | Device State |
|-----------------------|--------------------------------|--------------------------|-----------------------------------|
| On | On | On | Self-test (initial) |
| On | Off | Off | Self-test (in progress) |
| Off | Off | Off | Drive on-line (no tape loaded) |
| Off | Off | On | Drive on-line (tape loaded) |
| Off | Flashing | Flashing | Tape motion |
| On | Off | On | SCSI bus reset |
| Flashing | Flashing | Off | Error |
| Flashing | Off | Flashing | Time to clean |

Processor Dependent Code (PDC) Commands

Table 1-21 provides a brief summary of the PDC commands used to control or modify system operation. Type **HELP**, **?**, or **HELP** <command> for an explanation of each of the PDC commands and their syntax.

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Table 1-21. PDC Commands

| Command | Description |
|---------------------|---|
| AUTOBOOT <on/off> | Set Autoboot flag on or off |
| AUTOSEARCH <on/off> | Set Autosearch flag on or off |
| AUTO | Display Autoboot and Autosearch flags |
| BOOT | Boot after primary, alternate, or specified boot path |
| BOOT TIMER | Display/Set boot device timer |
| DEFAULT | Set default paths in Primary Storage |
| FASTSIZE | Display/Set FASTSIZE memory parameter |
| HELP or ? | Print Help menu |
| HELP <command> | Print Help information for <command> |
| INFO ¹ | Display I/O map, memory, and revision information |
| PATH | Display/Modify path information |
| PIM ¹ | Display LPMC PIM and HPMC PIM information |
| RESET | Reset the system |
| STABLE | Display contents of Stable Storage |
| TIME | Read/Set real time clock |

¹ These commands have been modified for the HP 3000/987/150, HP 3000/987/200, and HP 9000 G60/G70/H60/H70/I60/I70 systems.

Access Port Commands

Table 1-22 provides a brief summary of the Access Port commands. The commands are available after you type **(Ctrl)B** at the console. A complete discussion of these commands is provided in *****<xref APCOM>: undefined*****.

Table 1-22. Access Port Command Summary

| CONTROL MODE COMMANDS | | Valid At | |
|-----------------------|-------------------------------------|----------|----|
| Command | Description | LC | RC |
| CA | Configure Remote Support Modem Port | Y | Y |
| CO | Return to Console Mode | Y | Y |
| CS | Copy Screen | Y | Y |
| DI | Disconnect Remote Console | N | Y |
| DR | Disable Remote Operator Access | Y | Y |
| DS | Disable SPU Status Display | Y | Y |
| ER | Enable Remote Operator Access | Y | N |
| ES | Enable SPU Status Display | Y | Y |
| HE | Print Help Menu | Y | Y |
| LR | Lock Remote Support Modem Access | Y | Y |
| RS | Reset SPU | Y | Y |
| SE | Enter Session Mode on Remote Port | N | Y |
| SO | Security Options | Y | Y |
| TC | Initiate SPU Transfer of Control | Y | Y |
| TA | Initiate Self Test | Y | Y |
| TE | Tell | Y | Y |
| UR | Unlock Remote Support Modem Access | Y | N |

- LC = Local Console
- RC = Remote Console

For HP Internal Use Only

Normal Power-on Sequence

Table 1-23 describes each of the steps and the results of the power-on sequence. The Access port described in Table 1-23 is located on the Multifunction I/O card.

Table 1-23. Normal Power-On Sequence

| Step | Description | Results |
|------|---|---|
| 1 | System power-on by pressing DC On/Off switch | All front panel indicators will momentarily light. The orange and green indicators will remain lit throughout system selftest. |
| 2a | Access Port Selftest begins. (The Access Port is on the Multifunction I/O card) | Selftest LED on Multifunction I/O card is lit. Console LAN Selftest LED - HP 3000. Mux Status LED - HP 9000. |
| 2b | System Selftest begins execution. | CPU, memory, and I/O are tested. |
| 3 | Access Port Selftest completes. | Selftest LED goes out. |
| 4 | Access Port sends the system banner to the system console. | The system console displays the HEX code and the OSTAT fields in the system banner. |
| 5 | Access Port sends System Selftest HEX codes and OSTAT data to the console. | Access Port updates the banner information as System Selftest proceeds. |
| 6 | System Selftest finishes. Console path is tested. | Bootpath message appears on the system console. Note: If the system status banner has not been enabled with the ES command, the status banner will disappear at this time. |