HP 3000 Computer Systems

SERIES 37XE

Installation Manual

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"This product has been tested and licensed by the Fernmeldetechnisches Zentralamt (FTZ) for use in West Germany. Included with the system is a registration postcard to be completed and mailed for all German installations."

PRINTING HISTORY

New editions are complete revisions of the manual. Update packages, which are issued between editions, contain additional and replacement pages to be merged into the manual by the customer. The dates on the title page change only when a new edition or a new update is published. No information is incorporated into a reprinting unless it appears as a prior update; the edition does not change when an update is incorporated.

The software code printed alongside the date indicates the version level of the software product at the time the manual or update was issued. Many product updates and fixes do not require manual changes and, conversely, manual corrections may be done without accompanying product changes. Therefore, do not expect a one to one correspondence between product updates and manual updates.

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PREFACE

This manual describes the installation of an HP 3000 Series 37 Computer system. It is intended for use by Hewlett-Packard Customer Engineers trained on the HP 3000 Series 37 computer systems.

Before the system can be installed, the site must be adequately prepared, as described in the HP 3000 Series 37 Site Planning and

Preparation Guide, part number 30457-90008.

The following information can be helpful in installing the system.

HP-IB Diagnostic Manual Set	PN 30070-60068
CE Handbook	PN 30070-90010
Diagnostic/Utility System Reference Manual	PN 30070-90043
MPE System Utilities Reference Manual	PN 30000-90044
System Operator and Resource Management Reference Manual	PN 32033-90005
Series 37 Installation Video Cassette	PN 90304HZ

Service and Installation manuals for the peripheral devices installed with the system should be taken on site if familiarity with the device is limited.

This manual is organized as follows:

Section 1 - Defines Hewlett-Packard and Customer responsibilities in receiving the system.

Section 2 - Describes the mechanical and electrical characteristics of the System Processor Unit (SPU) and the I/O Extender.

Section 3 - Provides general installation instructions for the system hardware.

Section 4 - Provides system and peripheral turn-on procedures.

Section 5 - Provides system configuration and verification information.

Section 6 - Lists the topics that should be covered when familiarizing the new system operator with the system.

Section 7 - Lists the steps in upgrading the Series 37 customer-installable system to the Series 37XE system.

Appendix A - Provides information for cabling terminals and modems to the Series 37XE system.

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RECEIVING THE SYSTEM

SECTION 1

The Hewlett-Packard Customer Engineer (CE) is responsible for installing the HP 3000 Series 37XE computer system in accordance with the information in this manual. This includes installation and verification of the HP 3000 Series 37 SPU, I/O Extender, and any peripherals that are part of the system order. Hewlett-Packard data terminals should be installed when appropriate. Refer to the policy on installing HP Data Terminals, as described by the Computer Support Division.

The customer should immediately report any flaws to the HP Customer Engineer and to the carrier or to the carrier's agent. Be sure to save all crates, cartons, boxes, and packing material for inspection. Do not make any verbal reports of damage or missing items without making a written report. The Customer Engineer should report problems that are HP's responsibility to the Support Engineer at the appropriate HP division.

Missing or damaged items will be replaced without waiting for the settlement of claims. Items shipped to replace damaged parts will be billed to the customer until the damaged parts are returned to Hewlett-Packard. The customer should not release the carrier until the shipment is verified to be in good working order.

The customer is responsible for initially unpacking, inspecting, and locating the system. Disposal of packing material is also the responsibility of the customer.

Each Hewlett-Packard shipment has a packing list attached to one of the cartons, specifying the materials shipped. In addition, unpacking instructions are provided as required.

SYSTEM GENERAL DESCRIPTION

SECTION 2

INTRODUCTION

The HP 3000 Series 37XE system, product number 32450A, is made up of the HP 3000 Series 37 System Processing Unit (SPU), the I/O Extender, and the system cabinet. Each of the components is described below.

SPU PHYSICAL DESCRIPTION

The Series 37 SPU consists of a five-slot card cage, a power supply, and battery backup circuitry. The boards that make up the SPU are installed in the following slots:

Slot 5 Central Processing Unit (CPU) *

Slot 4 Peripheral Interface Processor (PIC) or
Advanced Terminal Processor (ATP37) **

Slot 3 512k byte Memory, ATP37, PIC, or empty ***

Slot 2 512k byte or 2048k byte Memory *

Slot 1 ATP37 *

* Must be installed in this slot.

** Do not move the PIC PCA unless four ATP37 PCAs and two Memory PCAs are installed in the system.

*** This slot can be empty if one 2048k byte Memory PCA is installed.

When running some of the diagnostic programs, you may see messages that refer to the TIC. The acronym refers to the Terminal Interface Controller. The TIC PCA is synonymous with the ATP 37 PCA.

I/O EXTENDER PHYSICAL DESCRIPTION

The I/O Extender provides five additional slots for ATP37, PIC, INP, or other interface PCAs. The backplanes, power supplies, battery packs, and rear panels of the SPU and I/O Extender are identical.

The differences between the SPU and the I/O Extender are:

- The CPU board and the Memory boards cannot be installed in the I/O Extender.

- There is no keyswitch on the I/O Extender. Power is controlled from the SPU by means of the interconnect cable.
- There are no I/O or REMOTE indicators on the front panel of the I/O Extender.
- There are minor hardware differences in the card cages to allow them to be connected together.

Both the SPU and the I/O Extender backplane slots are numbered from 1 through 5.

The I/O Extender is completely assembled and tested before shipment. It requires no assembly at the site. The external dimensions are the same as those of the SPU.

SYSTEM CABINET PHYSICAL DESCRIPTION

The SPU and the I/O Extender can be installed in the system cabinet. Two additional devices, such as the HP 7945A Disc Drive and the HP 9144A Tape Drive, can also be installed in the cabinet. Up to four devices are supported when plugged into the power tap in the cabinet.

SPU ELECTRICAL DESCRIPTION

The input electrical specifications of the SPU or the I/O Extender are listed below. If an SPU and an I/O Extender are installed in the same system, both the current and power requirements are doubled.

The SPU and I/O Extender operate on either 50 or 60 Hz power without reconfiguration.

VOLTAGE	Single phase Nominal operating range: 100-120 VAC or 200-240 VAC +/- 10% Maximum operating range: 90-132 VAC or 180-264 VAC
CURRENT	4A. maximum at 100 VAC
POWER	270 watts maximum at maximum output load
FREQUENCY	48 to 66 Hz
HOLD-UP	One cycle of input AC can be dropped without causing a Power Fail condition.

I/O EXTENDER ELECTRICAL SPECIFICATIONS

The I/O Extender electrical specifications are identical to the specifications of the SPU.

SYSTEM CABINET ELECTRICAL SPECIFICATIONS

There are two electrical configurations of the system cabinet power tap. One configuration provides 120 VAC, 12A, 50/60 Hz power. The unused receptacle is rated for 120 VAC at 2A. The second configuration provides 240 VAC, 6A, 50/60 Hz power. The unused receptacle is rated for 240 VAC at 1A.

SYSTEM INSTALLATION

SECTION 3

INTRODUCTION

System installation is the integration of the SPU, I/O Extender, system cabinet, peripherals, and system operating software. The following topics are discussed in this chapter.

- Configurations
- SPU Front Panel
- Installing the system cabinet
- Installing the SPU
- Installing the I/O Extender
- Installing peripherals in the system cabinet
- Installing the system console
- Installing peripherals
- System Information card

The HP 3000 Series 37XE Computer System consists of a system cabinet, SPU, I/O Extender, and associated peripherals. Supported RS-232 devices interface with the system through the Advanced Terminal Processor 37 (ATP37). Supported HP-IB devices interface with the system through the Peripheral Interface Controller (PIC). Figure 3-1 shows a typical system configuration.

Installation of a peripheral device consists of connecting either an RS-232 or HP-IB interface cable and an AC power cord. If questions arise or problems occur with any device, refer to the appropriate service manual. Unpack and move each device into place. Install it according to the procedures given in this section. After installation, print the name of each device on a receptacle tag. Attach the tag to the appropriate interface cable at the back panel of the SPU and I/O Extender.

WARNING

Hazardous voltages exist in the SPU, I/O Extender, and the peripheral cabinets when AC power is connected. Do not connect the SPU, I/O Extender, or any peripheral to AC power until all system components have been installed and all interconnections have been made. Failure to comply may result in serious injury.

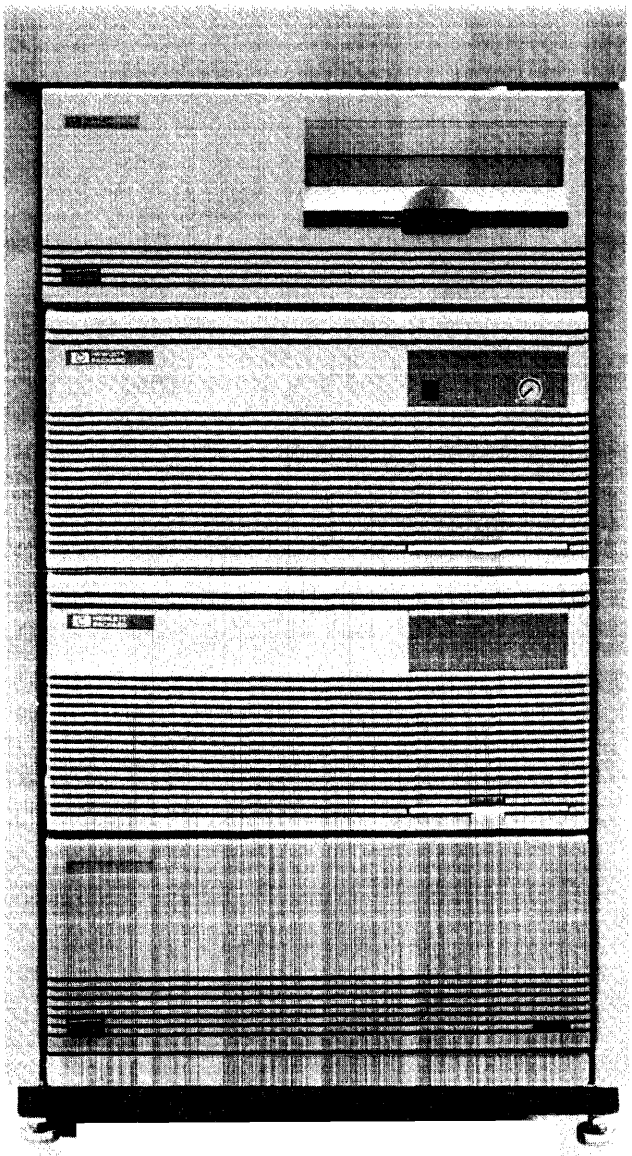


Figure 3-1. Typical System Configuration

NOTE

The power cords of all devices installed in the system cabinet should be plugged into the AC power strip in the cabinet. Only those devices installed in the cabinet should be plugged into this power strip.

CONFIGURATIONS

Table 3-1 shows the configurations that are allowed in the system cabinet. If the system cabinet is configured in any other manner, it no longer meets UL certification requirements. Figure 3-2 shows how the positions in the system cabinet are related to the location of the rails.

Table 3-1. Allowable System Cabinet Configurations

POSITION	ALLOWABLE DEVICES
1	HP 9144A Tape Drive or HP 32450A SPU
2	HP 32450A SPU or I/O Extender
3	I/O Extender, HP 7945A Disc Drive, or empty
4	HP 7945A Disc Drive or empty

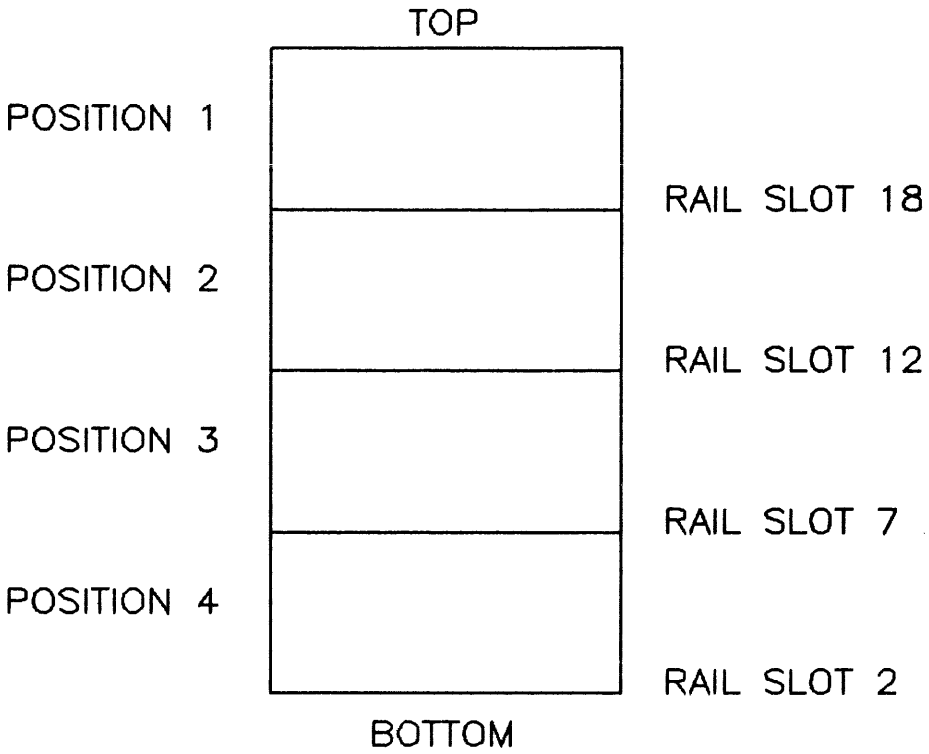


Figure 3-2. System Cabinet Rail Locations and Device Positions

SPU FRONT PANEL

The System Processor Unit (SPU) front panel is shown in Figure 3-3. The four-position key switch is used to select the control modes and power distribution of the SPU. The indicator lights show what power configuration is active and in what mode the system is running. The single digit LED display shows the status of the SPU when the self-test routines or MPE are executing.

Front Panel Key Switch

The SPU front panel key switch is used to turn the power on and off and to select the mode of operation. You can select either the normal mode or the maintenance mode of operation. Table 3-2 shows the key switch positions, the modes of operation, and the associated actions.

Front Panel Status Indicators

The front panel status indicators display the state of the SPU during operation.

The AC indicator is lit if AC power is applied to the SPU. Power is applied to the battery charger. The indicator is lit in all keyswitch positions.

The DC indicator is lit if DC power is present in the SPU. It is lit if the key switch is in positions 1, 2, or 3.

The BATTERY indicator is lit if the SPU is operating on battery backup power and if AC power is not present. This condition can occur if the front panel switch is in positions 1, 2, or 3.

The I/O indicator is lit only when the Channel Program Service Request (CSRQ) signal is asserted. It is not lit if ATP37 or memory operations are being executed. During normal operation, it will appear to be lit continuously because channel programs are executed frequently. The indicator will flicker when ATP37 or memory diagnostics are run. It can be lit when the key switch is in positions 1, 2, or 3.

The REMOTE indicator is lit if the key switch is in position 3 or, under certain circumstances, in position 2. This allows a terminal connected to port 7 via a modem to control the system.

Front Panel LED

The front panel LED displays a single hexadecimal code. The displayed codes perform two functions. They show the status of the SPU when it is in the self-test mode. They also show the status of MPE when it is running. There are two test modes. Self-test is run first. The normal sequence of displayed LED codes is 0, 1, 5, 1, 5, B, C, A. Self-test is then complete. If an error is detected, the error detection loop is executed.

The valid self-test and error detection hexadecimal codes and their descriptions are shown in table 3-3. The MPE status codes are shown in table 3-4. The LEDs display one digit at a time. If a two-digit error code is displayed, the digits of the code flash alternately. If no error code is displayed, the SPU is executing operational software.

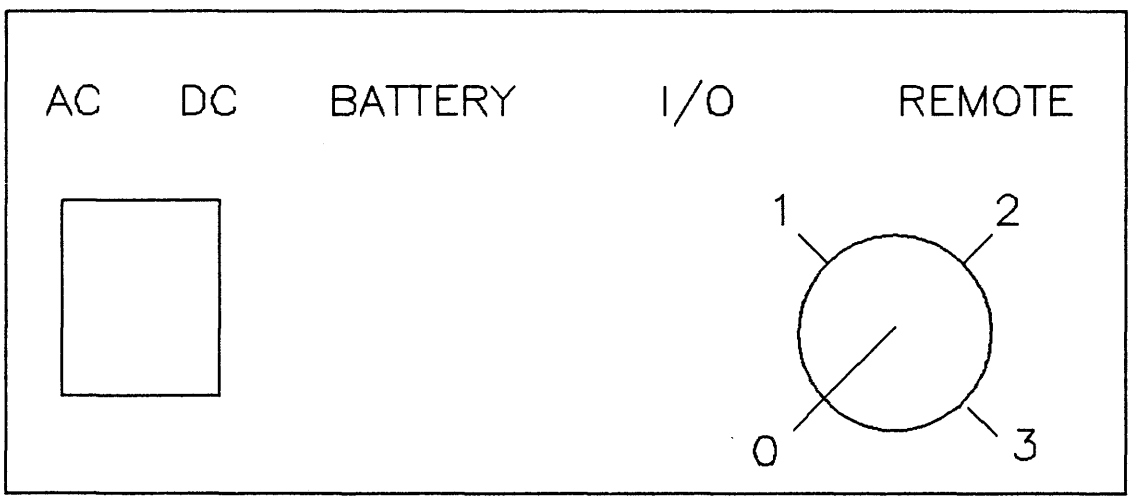


Figure 3-3. SPU Front Panel

Table 3-2. Key Switch Definitions

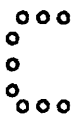
KEY SWITCH POSITION	MODE	ASSOCIATED ACTION
0	DC Off	DC power is off. Battery DC is off. AC power is applied. Power is applied to the battery charger.
1	Normal	The system console is on channel 1, port 0. Control B (maintenance mode) sequences cannot be executed in this mode.
2	Local	The system console on channel 1, port 0 is active and can execute the Control B sequence.
3	Remote	The terminal on channel 1, port 7 (remote port) is the active console and can execute the Control B sequence. The local console on port 0 monitors and displays remote console data transfers.

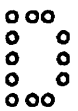
Table 3-3. Front Panel LED Codes and Descriptions

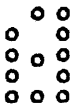
LED CODE	DESCRIPTION
0	Not used.
1	ROM code loads into WCS.
2	Not used.
5	Processor chip, WCS, RFILE tests executing.
0	Maintenance code entered. Multi-bit memory error occurred.
B	A steady "B" means the memory test is executing. A flashing "B" means the memory failed the test.
C	A steady "C" means the Console ATP37 in slot 1 is being tested. A flashing "C" alternating with a "1" means the Console ATP37 failed. If only a flashing "C" occurs, speed sensing of the terminal failed.
D	IOMAP
E	This error code shows that the ATP37 or PIC in the indicated Extender slot has failed. The "E" and the slot number flash alternately.
A	All tests passed.

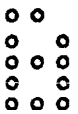
Table 3-4. MPE Status Codes

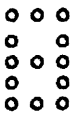
 – Run Mode. Not processing interrupts and not executing the Pause instructions.

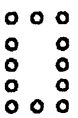
 – Processing interrupts on the Interrupt Control Stack (ICS).

 – Executing the Pause instruction.

 – Looping between the conditions that display the A and C codes.

 – Looping between the conditions that display the A and D codes.

 – Looping among the conditions that display the A, C, and D codes.

 – Looping between the conditions that display the C and D codes.

INSTALLING THE SYSTEM CABINET

Install the system cabinet as follows:

CAUTION

The cabinet is front-heavy and unstable when the legs are raised. Do NOT sit on the cabinet and do NOT push it from the rear or sides.

1. Position the cabinet in an area that allows access to the cabinet door and AC power receptacle, and allows the removal of the sides of the cabinet.

2. Secure the cabinet by lowering the four legs to the floor.

CONNECTING THE SPU TO THE I/O EXTENDER

Connect the SPU to the I/O Extender using the following procedure.

1. Remove the key from the keyswitch.

2. Using a number 0 Phillips screwdriver, loosen the two captive screws at the top corners of the SPU front panel and remove the front panel.

3. Using a number 1 Pozidriv screwdriver, remove two screws and remove the SPU cover plate. The cover plate is located at the bottom of of the SPU. Save the screws.

4. Using a number 0 Phillips screwdriver, loosen the two captive screws at the top corners of the I/O Extender front panel and remove the front panel.

5. If mounting feet are installed on either unit, remove them as follows:

    a. Press down on the rear tab of the mounting foot until the tab is released from the card cage.

    b. Push the mounting foot to the rear of the card cage until it is released from the card cage.

6. Place the I/O Extender on a work surface and set the SPU on top of it. Align the rear tabs on the Extender with the slots in the SPU.

7. Slide the SPU forward and lower it onto the Extender. Align the front tabs on the Extender with the slots in the SPU.

8. Using the screws saved above, fasten the SPU to the Extender.

9. Align the keys of the SPU/Extender interconnect cable connectors with the keyways in the interconnect sockets.

10. Press the interconnect cable connectors into the interconnect sockets.

11. Manually tighten the four knurled bolts on the interconnect cable connectors.

12. Install the I/O Extender front panel by reversing the removal procedure in step 4 above.

13. Install the SPU front panel by reversing the removal procedure in step 2 above.

INSTALLING DEVICES IN SYSTEM CABINET

Procedures for installing the SPU, I/O Extender, HP 7945A Disc Drive, and HP 9144 Cartridge Tape Unit in the system cabinet are provided below.

Installing the HP 7945 Disc Drive

Install the HP 7945A Disc Drive in the system cabinet as follows:

1. Place the disc drive on its side and remove the two mounting feet from the bottom of the disc drive by lifting the back of the mounting foot with a screwdriver, sliding the mounting foot back, and lifting out the mounting foot. Discard the mounting feet. They are not needed.

2. Set the HP-IB switches to 1, using a pencil to move switch 1 to the 1 position. Set the remaining switches to the 0 position.

3. Slide the disc drive onto the rails in position 4. Do NOT slide the disc drive all the way into the cabinet.

4. Attach a module lock to each side of the disc drive and to the cabinet frame as follows:

    a. Place a module lock in the groove at each top corner of the disc drive.

    b. Slide the disc drive into the frame so that the module lock touches the frame.

    c. Slide each clip into each lock.

Verify that the module locks are properly installed by trying to slide the disc drive out of the cabinet. They should hold the disc drive securely in the cabinet.

Installing SPU and Extender in Cabinet

The rails in the system cabinet are normally installed in slots 2, 7, 12, and 18. Slot 1 is at the bottom of the cabinet. If the HP 9144A Cartridge Tape Unit is to be installed in position 1, remove the rails in slot 12. Slide the SPU and I/O Extender onto the rails in slot 7.

If the HP 32450A SPU is to be installed in position 1, remove the rails in slot 18. Slide the SPU and I/O Extender onto the rails in slot 12. Attach a module lock to each side of the SPU and to the cabinet frame as follows:

1. Place a module lock in the groove at each top corner of the SPU.

2. Slide the SPU and I/O Extender into the frame so that the module lock touches the frame.

3. Slide each clip into each lock.

Verify that the module locks are properly installed by trying to slide the SPU and I/O Extender out of the cabinet. They should hold the SPU and I/O Extender securely in the cabinet.

Installing the HP 9144 Cartridge Tape Unit

Install the HP 9144A Cartridge Tape Unit in the system cabinet as follows:

1. Place the cartridge tape unit on its side. Remove the two mounting feet from the bottom of the tape unit by lifting the back of the mounting foot with a screwdriver, sliding the mounting foor back, and lifting out the mounting foot. Discard the mounting feet. They are not needed.

2. Set the HP-IB switches to 3, using a pencil to set switches 1 and 2 to the 1 position. Set the remaining switches to the 0 position.

3. Slide the cartridge tape drive onto the rails in position 1. Do NOT slide the tape unit all the way into the cabinet.

4. Attach a module lock to each side of the tape unit and to the cabinet frame as follows:

    a. Place a module lock in the groove at each top corner of the tape unit.

    b. Slide the tape unit into the frame so that the module lock touches the frame.

    c. Slide each clip into each lock.

Verify that the module locks are properly installed by trying to slide the tape unit out of the cabinet. They should hold the tape unit securely in the cabinet.

Installing Filler Panels

If fewer than four devices are installed in the system cabinet, you must leave position 4 empty. Fill the empty position with the supplied filler panels. Working from top to bottom, insert the filler panels. Leave the bottom space open.

CONFIGURING THE SPU AND THE I/O EXTENDER

The SPU and I/O Extender card cages must be configured according to the following rules:

- The CPU PCA must be installed in slot 5 of the SPU.

- The first ATP37 PCA must be installed in slot 1 of the SPU.

- The first memory PCA must be installed is slot 2 of the SPU. If a second memory PCA is installed, it must be installed in slot 3.

- No memory can be installed in the I/O Extender.
- There must be at least one slot between ATP37 PCAs or between any other assemblies that have connectors installed on the right side.
- An Intelligent Network Processor (INP) PCA cannot be installed directly above an ATP37 PCA.
- An ATP37 cannot be installed in slot 5 of either the SPU or the I/O Extender.
- A maximum of four ATP37s can be installed in the system.
- A maximum of three PICs can be installed in the system. Only two high-speed PICs can be installed. If a third PIC is installed, only INPs can be connected to it.
- If two memory PCAs are not installed, the fourth ATP37 PCA can be installed in slot 3 of the SPU.
- If the I/O Extender is empty, the PIC must be installed in slot 5 of the I/O Extender.
- A maximum of three INP PCAs can be installed in the system.
- A maximum of two 512k byte memory PCAs or one 2048k byte memory PCA can be installed in the system. You cannot install 512k byte memory PCAs and 2048k byte memory PCAs in the same system.
- You cannot install the maximum number of all PCAs in one system.

In the SPU card cage, slot 1 (channel1) has the highest priority. Slot 5, which is reserved for the CPU PCA, has the lowest priority. PCAs in the SPU have a higher priority than those in the I/O Extender. In the I/O Extender, the lowest channel numbers have the highest priority. Figure 3-4 shows the channel numbers associated with the slots.

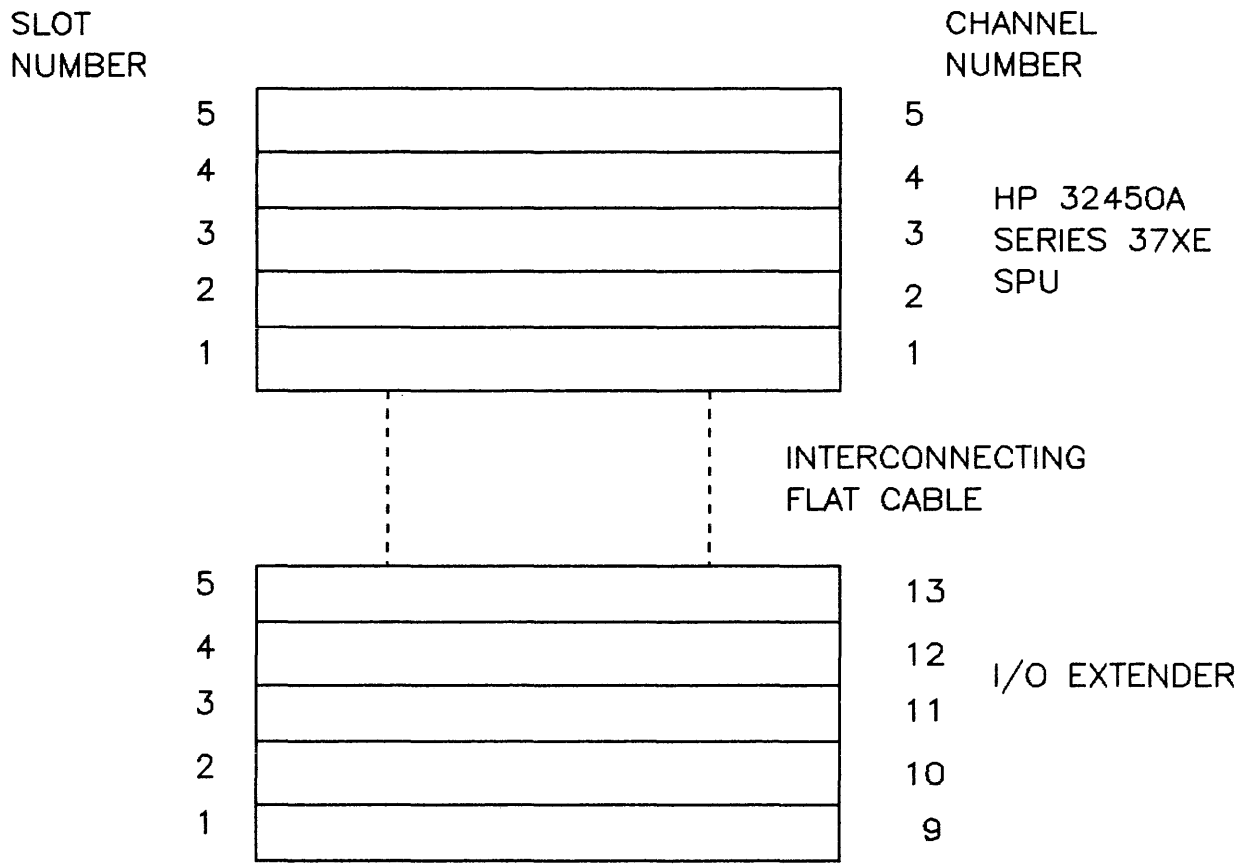


Figure 3-4. SPU/Extender Slot and Channel Assignments

I/O EXTENDER SERVICE NOTE

DC power in the I/O Extender is controlled by the keyswitch on the SPU. The SPU and the I/O Extender are connected by the flat interconnect cable. If DC power is turned off and the interconnect cable is removed, DC power in

the I/O Extender will be turned on if the AC power has not been removed. This will also happen if the Display Board cable in the SPU is removed. Under these circumstances, if the AC power is later removed, battery backup will be turned on, keeping the memory voltages up.

Because of power loading requirements, the I/O Extender is not supported without at least one I/O board being installed. If the I/O Extender is empty, it is not guaranteed that DC power will come up.

INSTALLING THE SYSTEM CONSOLE

The standard system console is the HP 2392A terminal. However, any of the Hewlett Packard terminals that are supported on this system can be used as the system console. Use the following procedure for installing the system console.

1. Place the terminal to be used as the system console on the appropriate surface.
2. Ensure that the terminal ON/OFF switch is in the OFF position.
3. Connect the AC power cord from the terminal to a dedicated source of AC power.
4. Connect the terminal keyboard cable to the back of the terminal housing.
5. Connect the terminal to port 0 of the ATP37 PCA in slot 1 of the SPU.

INSTALLING PERIPHERALS IN SYSTEM

Table 3-5 lists the internal HP-IB device loads and internal cable lengths of the supported HP-IB devices.

Electrical device loads are not identical to devices. Electrical device loads match the impedance of the device to the impedance of the PIC PCA.

The following rules determine the number of devices that can be attached to one PIC and the number of meters of cable used to attach them to a PIC.

1. Each PIC has seven internal HP-IB electrical device loads.
2. Each PIC can support up to eight external HP-IB electrical devices.
3. Therefore, each PIC can support 15 HP-IB device loads.

Note that each PIC can support up to six physical HP-IB devices.

To determine the number of devices to attach to one PIC and the number of meters of cable to be used, see table 3-4 and perform the following calculations:

1. To the eight device loads of the PIC, add the loads of the devices you want to attach. The sum can not be greater than 15.

2. Subtract the internal cable lengths of the devices from this number.

3. The result is the maximum number of meters of cable that can be used to attach the HP-IB devices to a PIC.

No more than two HP-IB cables can be connected to any PIC or INP-C PCA.

When adding additional cable, do not connect two HP-IB cables together. For example, if you need a two-meter cable, use one two-meter cable. Do not connect two one-meter cables.

Table 3-5. Supported HP-IB Devices

PERPIHERAL	HP-IB LOADS	INTERNAL CABLE LENGTH
DISC DRIVES		
7914	1	1
7933	1	0
7935	1	0
7945	1	0
TAPES		
7974	1 (1,3,5,7)	0
7978	1 (1-3)	0
9144	1	0
SYSTEM PRINTERS		
2563	1 (1-8)	1
2565	1	0
2566	1	0
2680	4 (1-8)	1
2688	4 (1-8)	1

Installing Disc Drives

HP 7914A, HP 7933A, HP 7935A, and HP 7945A disc drives can be installed on the system. A maximum of eight disc drives can be installed on one system. Table 3-6 shows the maximum number of each disc that can be installed on the system.

Table 3-6. Maximum Number of Discs per Type on System

DISC TYPE	NUMBER OF DISCS
7914P	4
7933H	4
7935H	4
7945A	4

The general installation procedure for these discs is described in the following paragraphs. Refer to the appropriate disc service and installation manuals for detailed set-up instructions and parts lists.

1. Ensure that the power cords to the SPU and the I/O Extender are disconnected from the line power source and that the keyswitch is set to the 0 position.

2. Set the disc drive POWER switch, located at the rear of the drive, to the OFF position.

3. Connect the HP-IB device I/O cable to the connector on the rear of the disc drive.

4. Route the HP-IB device I/O cable to a PIC PCA connector in the SPU or the I/O Extender.

5. If the disc is not installed in the system cabinet, connect the disc drive AC power cord to a dedicated AC power source with an isolated ground.

6. Ensure that the HP-IB address is set correctly. Refer to the procedure for setting the HP-IB address in the manual shipped with the drive.

Installing Tape Drives

General instructions for installing tape drives are provided below. Refer to the specific operating and installation manuals for more detailed information.

Install the tape drive as follows:

1. Ensure that the power cords to the SPU and the I/O Extender are disconnected from the line power source and that the keyswitch is set to the 0 position.

2. Set the POWER switch on the tape drive to the OFF position.

3. Ensure that the source voltage matches the requirements of the tape drive.

4. Connect one end of the HP-IB device I/O cable to the tape drive and the other end to a PIC PCA connector in the SPU or the I/O Extender.

5. Connect the power cord from the tape drive to a dedicated AC power source with an isolated ground.

6. Ensure that the HP-IB address is set correctly. Refer to the procedure for setting the HP-IB address in the manual shipped with the drive.

Installing System Printers

General instructions for installing system printers are provided below. Refer to the specific operation and installation manuals for more detailed information.

Installing HP 2563/2565/2566 Printers

The following steps describe the installation of the HP 2563/2565/2566 Line Printers. Refer to the appropriate service manual for more detailed information.

1. Ensure that the power cords to the SPU and I/O Extender are disconnected from the line power source and that the keyswitch is set to the 0 position.

2. Verify that the source voltage matches the power requirements of the printer.

3. Connect the I/O interface cable from the computer system to the interface connector on the back of the printer.

4. Connect the printer AC power cord to the AC power input jack on the back of the printer and plug the other end into the AC outlet. Ensure that the power circuit has an isolated ground.

5. Set the POWER switch located on the back of the printer to the ON position.

6. Load ribbon and paper as described in the ribbon and paper loading sections of the HP 2563A Operator's Manual.

7. If you have an HP-IB interface, select the HP-IB address as described in the HP-IB Address Section of the Operators Manual. If you have an interface other than HP-IB, configure your interface as described in the interface manual provided with your printer.

8. With the printer off-line, press the TEST key on the Operator Control Panel. Then press the ENTER key. A self-test printout will be printed. Compare the results with the self-test printout in the back of the Operator's Manual. Remember that the self-test printout varies depending on which character set options are installed. The printer is ready for operation if no error numbers flash on the self-test display and if the characters on the self-test printout are clear and well-formed.

Installing HP 2680/HP 2688 Page Printers

To install the HP 2680A Page Printer or the HP 2688A Page Printer, refer to the detailed instructions provided in the manuals that accompany the printer.

CAUTION

The page printer contains a laser device. Although it is a low power laser, the safety precautions provided in the service documentation must be followed. Only qualified personnel should install and service the printer.

Installing Terminals

General instructions for installing terminals are provided below. Refer to the specific operation and installation manuals for more detailed information.

1. Ensure that the terminal main power switch is set to OFF.
2. Ensure that the power source voltage matches the terminal requirements.
3. Connect the power cord from the terminal to a dedicated power receptacle with an isolated ground.
4. Connect the keyboard and RS-232 cables to the appropriate connectors on the terminal.
5. Route the free end of the RS-232 cable to the ATP37 PCA in the SPU or I/O Extender.

Installing Plotters

General instructions for installing plotters are provided below. Refer to the specific operation and installation manuals for more detailed information.

Install the plotter as follows:

1. Set the POWER switch to the OFF position.
2. Ensure that the source voltage matches the requirements of the plotter.
3. Connect the power cord from the plotter to a dedicated power source with an isolated ground.
4. Ensure that the baud rate switches are set correctly. Refer to the procedures for setting the switches in the manual shipped with the plotter.
5. Set the POWER switch to the ON position.

SYSTEM INFORMATION CARD

When the system is correctly installed, fill out the System Information card and put it in a safe location at the site. The information on the completed card is useful when servicing the system.

TURNING ON THE NEW SYSTEM

SECTION 4

SPU/PERIPHERAL TURN-ON

1. Ensure that the SPU voltage matches that of the power source.
2. Set the SPU keyswitch to the 0 position.
3. Connect the AC power cord to the appropriate 60 Hz or 50 Hz receptacle.
4. Turn on all peripheral devices and put all peripheral devices on line.
5. Set the SPU keyswitch to the 1 position.
6. Ensure the operation of the SPU and I/O Extender fans.

SYSTEM VERIFICATION

SECTION 5

The system is verified in two steps.

Step one is an OFF-LINE verification that checks the following areas:

- Cold Load path - done by Self Test
- Selected assemblies - done by DUS
- Peripheral devices - done by DUS

Step two is an ON-LINE verification that does the following:

- System Cold Load from magnetic tape or cartridge
- System Configuration
- Power Fail Verification

Refer to the HP 3000 HP-IB Computer Systems Diagnostic Manual Set (PN 30070-60068) for the information required to run diagnostics and Self Test. If a step does not successfully complete, corrective action is required before proceeding. Use the diagnostics and associated manuals to identify hardware problems. Use the appropriate peripheral device service manuals for specific hardware and maintenance descriptions.

OFF-LINE VERIFICATION

1. Run the Terminal Self Test on the system console.
2. Run the Power-on Self Test.
3. Run the microcode IOMAP.
4. Run all of the tests of the Control B Test Mode.
5. Cold load the Diagnostic/Utility System (DUS) as described in the diagnostic manual.
6. Type IOMAP while in DUS. A map of the I/O configuration of the devices connected to the system is output to the system console. Verify that all device and channel numbers correspond to the configuration matrix.
7. Run the TICDIAG, PICDIAG, and MDIAG37 standalone diagnostics.

8. Run all appropriate diagnostics, self tests, and SLEUTH verifiers on the installed peripherals.

ON-LINE VERIFICATION

1. Ready all disc drives. Ensure that the system disc drive is identified as device 1.

2. Run the microcode IOMAP. Ensure that the HP-IB channel and device number of the cold load device match the values in the Time of Century (TOC) Clock RAM.

3. Cold load and configure the I/O devices onto the system.

TRAINING THE SYSTEM OPERATOR

SECTION 6

The CE is responsible for familiarizing the operator with the operation and periodic customer maintenance of the HP 3000 Series 37 computer. The main sources of information that should be used are the System Operator and Resource Management Guide and the System Support Log. General information covering the following topics should be discussed.

- The documentation supplied with the system
- Power on/off sequence
- SPU keyswitch positions
- Daily maintenance, such as cleaning magnetic tape heads and vacuuming printers
- Connecting data terminals
- Peripheral device operation, to include error indicators and loading disc packs
- Self test
- Warmstart
- Coldload
- Shutdown
- System backup
- Reserve a tape for memory dumps
- Process memory dumps
- Log all hardware failures in System Support Log

UPGRADE INSTALLATION

SECTION 7

SYSTEM UPGRADE

The HP 3000 Series 37 is a customer-installable system that can be upgraded to the Series 37XE system.

Expand the system as follows:

1. If 1024k bytes of memory are to be installed in the Series 37XE SPU, insert the 512k byte memory PCA in the SPU.

   If 2048k bytes of memory are to be installed in the Series 37XE SPU, remove the memory PCAs that are installed and install the 2048k byte memory PCA in slot 2.

2. Connect the SPU to the I/O Extender as described in Chapter 3.

3. Install the PIC PCA in the I/O Extender if it is empty. If it is not empty, leave the PIC PCA in the SPU.

4. Install the SPU and the I/O Extender in the system cabinet as described in Chapter 3.

CABLING INFORMATION

APPENDIX
A

Figure A-1 shows how to connect terminals and modems to the Series 37XE system.

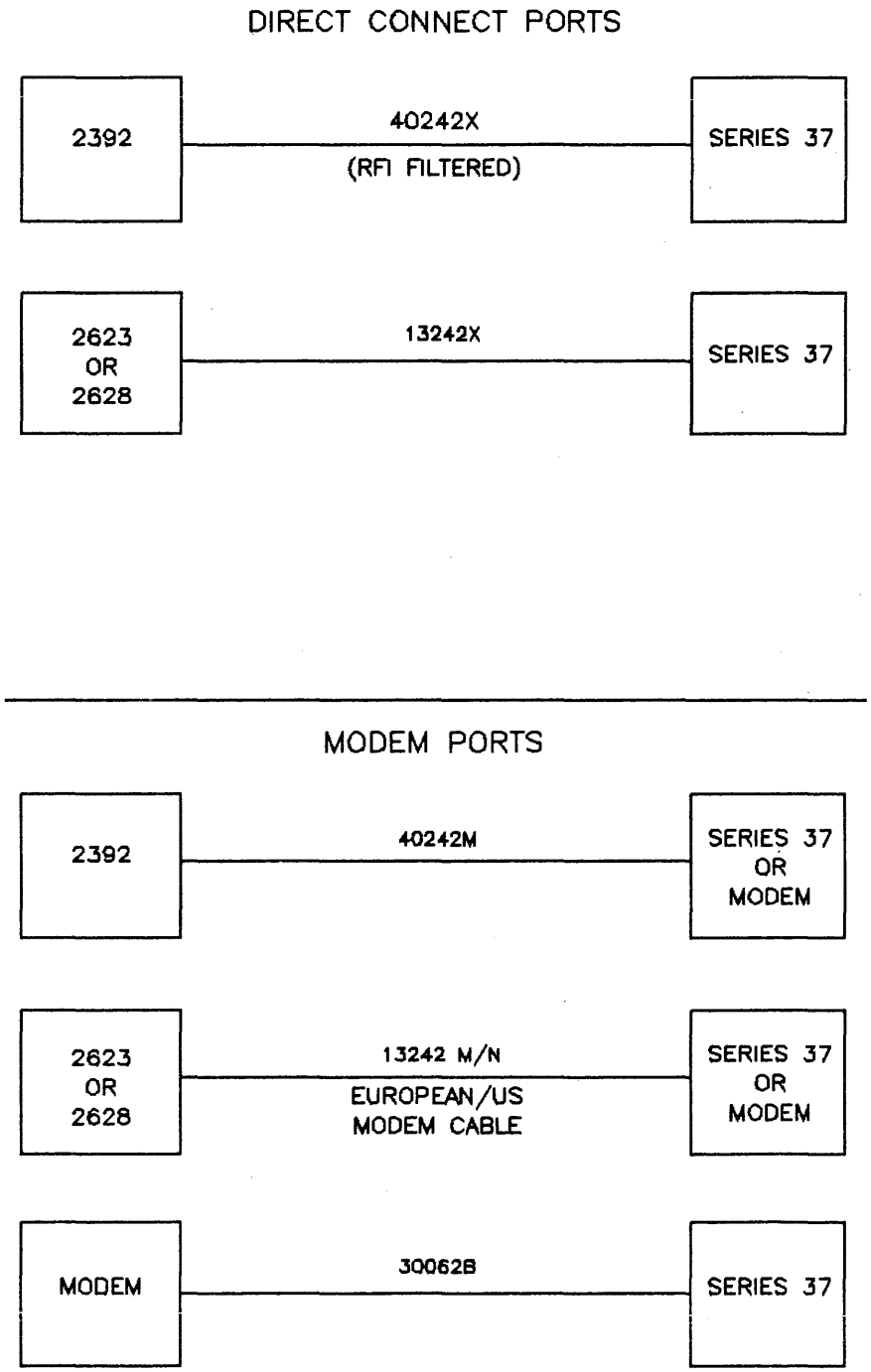


Figure A-1. Cabling Diagram

READER COMMENT SHEET

SERIES 37XE INSTALLATION MANUAL (P/N 30457-90009)

Model Number: **Serial Number:**

We welcome your evaluation of this manual. It is one of several that serve as a reference source for HP 3000 Series 37 Computer Systems. Your comments and suggestions help us improve our publications and will be reviewed by appropriate technical personnel. HP may make use of the submitted suggestions and comments without obligation. **Please comment on any NO response.**

Did the shipment arrive undamaged? **Yes [] No []**

Was the shipment complete? **Yes [] No []**

Was the physical appearance OK? **Yes [] No []**

Was the mechanical condition OK? **Yes [] No []**

Was the system easy to install? **Yes [] No []**

Does the hardware operate properly? **Yes [] No []**

Does the software operate properly? **Yes [] No []**

Is this manual technically accurate? **Yes [] No []**

Are the concepts and wording easy to understand? **Yes [] No []**

Is the format of this manual convenient in size, arrangement and readability? **Yes [] No []**

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