HP 13306A
Fast FORTRAN Processor Kit
installation manual

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HEWLETT PACKARD

HEWLETT-PACKARD COMPANY
11000 WOLFE ROAD, CUPERTINO, CALIFORNIA, 95014

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MICROFICHE PART NO. 13306-90002

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INTRODUCTION

This manual provides installation instructions for the HP 13306A Fast FORTRAN Processor Kit, which is an accessory for the HP 21MX E-Series Computer. Additional information is provided in the following manuals:

a. *HP 21MX E-Series Computer Operating and Reference Manual*, part no. 02109-90001.

b. *HP 21MX E-Series Computer Installation and Service Manual*, part no. 02109-90002.

c. *HP 21MX E-Series Computer Microprogramming Reference Manual*, part no. 02109-90004.

d. *HP 13304A Firmware Accessory Board Installation and Service Manual*, part no. 13304-90001.

DESCRIPTION

The HP 13306A Fast FORTRAN Processor (FFP) Kit consists of nine read-only-memory (ROM) integrated-circuits (IC's) and a diagnostic test. Six 1K ROM IC's are allocated to control store module 33 (decimal) and three 4K ROM IC's are allocated to control store modules 34 and 35 (decimal), as follows:

DESCRIPTION	HP PART NO.
4K ROM IC (Bits 7-0)	5950-0569
4K ROM IC (Bits 15-8)	5950-0570
4K ROM IC (Bits 24-16)	5950-0571
1K ROM IC (Bits 3-0)	13306-80001
1K ROM IC (Bits 7-4)	13306-80012
1K ROM IC (Bits 11-8)	13306-80003
1K ROM IC (Bits 15-12)	13306-80004
1K ROM IC (Bits 19-16)	13306-80005
1K ROM IC (Bits 23-20)	13306-80006

INSTALLATION

The HP 13304A Firmware Accessory Board Kit is required for the installation of the nine FFP ROM IC's. Install the FFP ROM IC's on the firmware accessory board (FAB) as follows:

WARNING

Hazardous voltages are present inside the computer mainframe!! Before installing the FFP ROM IC's, set ~LINE and BATTERY switches to OFF and DISCONNECT THE POWER CORD!! Failure to observe this precaution can result in serious injury.

CAUTION

All contents of memory will be lost when the mains (line) and battery voltages are both off. Therefore, before proceeding with the installation, ensure that any contents of memory to be saved are stored in another medium for later retrieval.

a. Set computer ~LINE and BATTERY switches to OFF and disconnect power cord.

b. Disconnect I/O extender cable assembly (if present) from CPU PCA edge connector.

c. Loosen screw located in rear fold of bottom cover; slide cover toward rear and remove.

d. If FAB is presently installed, remove FAB connector assembly from FAB connector J1 and CPU PCA connector J2. Remove the four screws and lockwashers attaching FAB to CPU PCA standoffs and remove FAB. (See figure 1.)

CAUTION

ROM IC's may be permanently damaged if oriented incorrectly when installed and power is applied.

e. On new or removed FAB, install the nine ROM IC's in the following locations (see figure 2):

LOCATION	ROM IC	BITS	MODULE NO.
A7 (XU802)	13306-80001	3-0	33
A8 (XU803)	13306-80012	7-4	33
A9 (XU804)	13306-80003	11-8	33
A10 (XU806)	13306-80004	15-12	33
A11 (XU807)	13306-80005	19-16	33
A12 (XU808)	13306-80006	23-20	33
B4 (XU406)	5950-0569	7-0	34,35
B5 (XU408)	5950-0570	15-8	34,35
B6 (XU409)	5950-0571	24-16	34,35

Ensure that the IC's are oriented correctly as shown in figure 2 by matching pin 1 of each IC with the white dot on each IC socket.

f. Configure the control store module address jumpers for modules 33, 34, and 35 as shown in figure 2.

g. Position the FAB over the CPU PCA standoffs and secure it in place with the four screws and lockwashers. (See figure 1.) Note that the FAB obtains its dc power from the CPU PCA standoffs.

h. Connect FAB connector assembly between FAB connector J1 and CPU PCA connector J2.

i. Replace bottom cover.

j. Connect I/O extender cable assembly (if present) to CPU PCA connector J3.

k. Connect power cord to computer and set ~LINE and BATTERY switches to ON.

l. Rotate key-operated switch to R (reset) and then to OPERATE.

CHECKOUT

After installing the FFP, verify proper operation by performing the Fast FORTRAN Processor diagnostic test described in the *Diagnostic Reference Manual*. Part numbers for the diagnostic test are as follows:

DIAGNOSTIC*	MANUAL	PAPER TAPE
Fast FORTRAN Processor	12977-90002	12977-16004 12977-16005

If the diagnostic test is completed without an error halt, the FFP is operating correctly. If the diagnostic test indicates an error halt, refer to the *FAB Installation and Service Manual*, part no. 13304-90001, for troubleshooting information. If trouble still persists, contact your nearest Hewlett-Packard Sales and Service Office. A list of the HP Sales and Service Offices is given in the *HP 21MX E-Series Computer Operating and Reference Manual*, part no. 02109-90001, and the *HP 21MX E-Series Installation and Service Manual*, part no. 02109-90002.

*The absolute binary code for this diagnostic is contained on one or more media (e.g., paper tape, cartridge tape, disc, and magnetic tape). The binaries also exist on single as well as multiple files. For the current date code(s) associated with these media, refer to appendix A in the *Diagnostic Configurator Manual*, part no. 02100-90157, dated August 1976 or later.

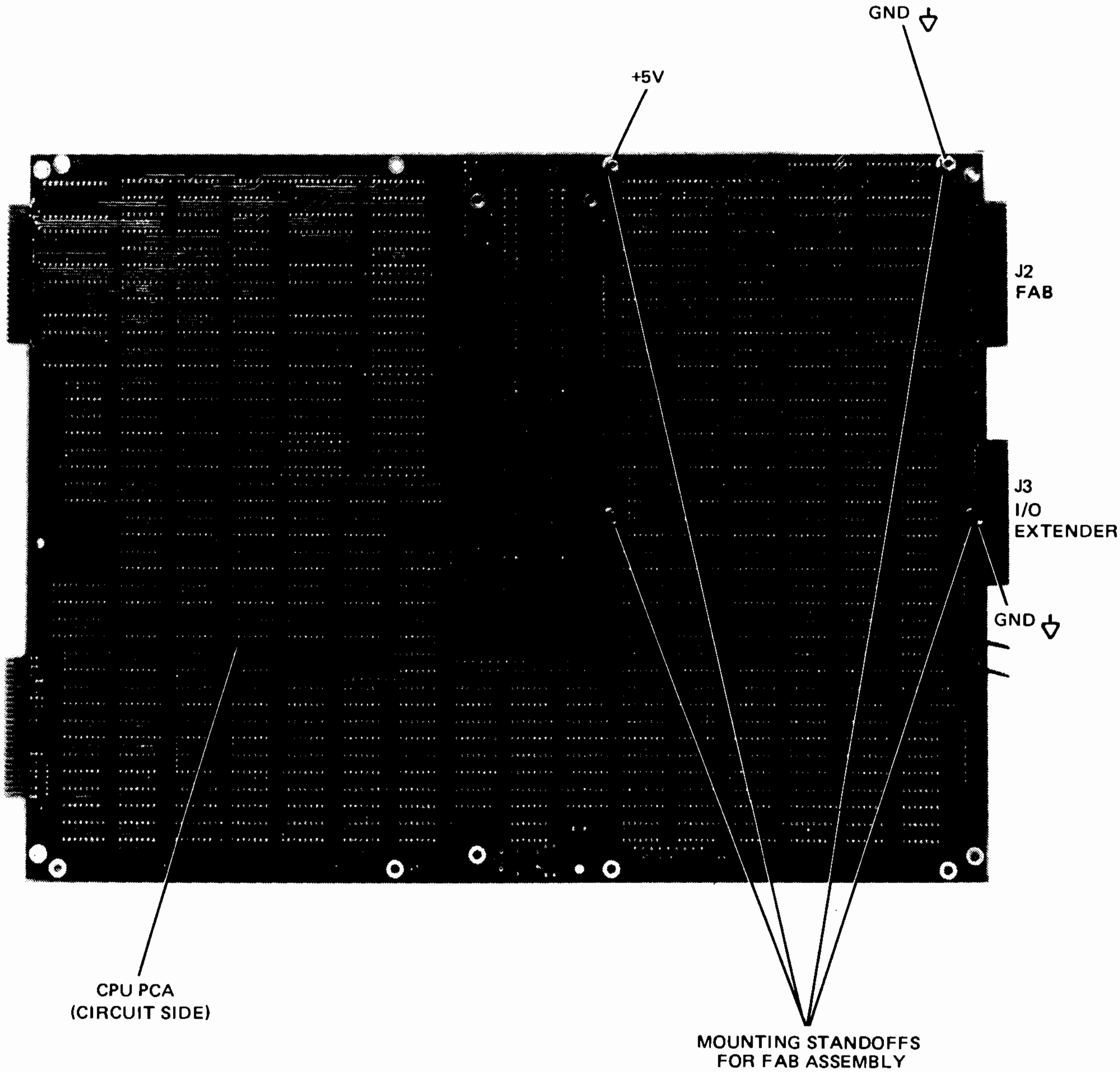
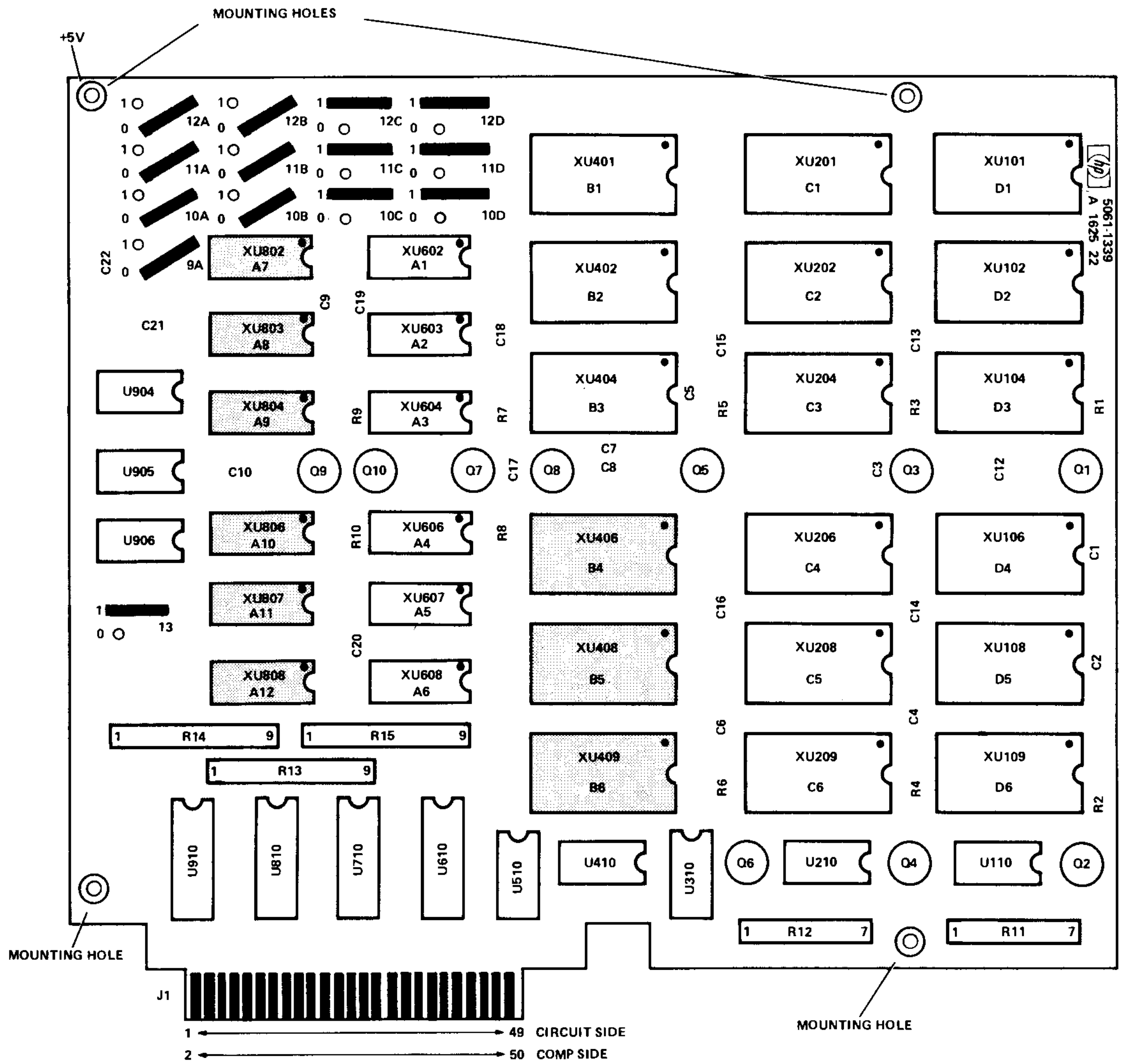


Figure 1. Firmware Accessory Board Mounting Details



NOTES:

1. SHADED IC SOCKETS INDICATE DEDICATED LOCATIONS FOR NINE FFP ROM IC's.
2. JUMPERS 9A, 10A, 11A, 12A, AND 13 SHOWN CONFIGURED FOR ROM MODULE 33 (DECIMAL). THIS JUMPER CONFIGURATION RESTRICTS THE REMAINDER OF BLOCK "A" (A1 THRU A6) TO ROM MODULE 32, WHICH IS RESERVED FOR THE HP DYNAMIC MAPPING SYSTEM INSTRUCTIONS.
3. JUMPERS 10B, 11B, 12B, AND 13 SHOWN CONFIGURED FOR ROM MODULES 34 AND 35 (DECIMAL). THIS JUMPER CONFIGURATION RESTRICTS THE REMAINDER OF BLOCK "B" (B1 THRU B3) TO ROM MODULES 32 AND 33. HOWEVER, SINCE MODULES 32 AND 33 HAVE BEEN PREVIOUSLY ASSIGNED TO BLOCK "A", THESE MODULES CANNOT BE REASSIGNED TO BLOCK "B." THUS, ROM IC's CANNOT BE INSTALLED IN SOCKETS B1, B2, AND B3.
4. JUMPERS 10C THRU 12C, AND 10D THRU 12D ARE SHOWN IN POSITION "1"; HOWEVER, THESE JUMPERS DO NOT AFFECT FFP OPERATION.
5. JUMPER 13 POSITION AS SHOWN RESTRICTS FAB OPERATION TO UPPER 8K OF CONTROL STORE (MODULES 32 THRU 63).

Figure 2. FAB IC Loading and Jumper Configuration

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