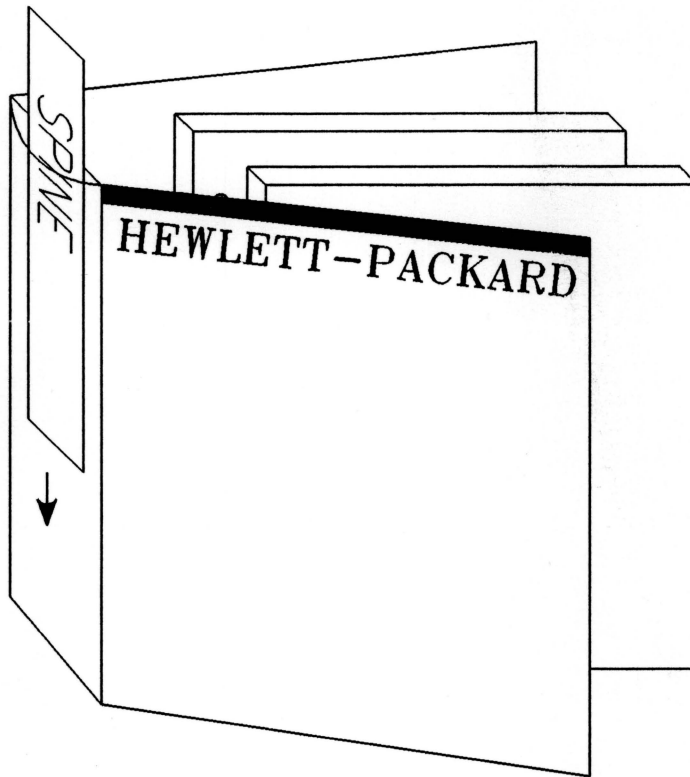


Model 64655A Interface Module

Service Supplement

HP Part Number 64655-90904

Install this manual, along with the HP Support Services manual in a 1-inch binder (*HP Part number 9282-1077*) as shown in the diagram below:



ORDER OF MANUALS IN BINDER: (FRONT TO BACK)

1. Model 64655A Interface Module 8085
- Service Information (**this manual**).
The spine is included with this manual.

HP Part Number 64655-90904

2. HP Support Services

HP Part Number 64801-90909

HP 64000/64000-UX

Microprocessor Development Environment

Model 64655A Interface Module 8085

Service Information

NOTE: All references to the HP 64000 also apply to the HP 64000-UX Microprocessor Development Environment unless otherwise specified.



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LOGIC SYSTEMS DIVISION
COLORADO SPRINGS, COLORADO, U.S.A.

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CERTIFICATION

Hewlett-Packard Company certifies that this product met its published specifications at the time of shipment from the factory. Hewlett-Packard further certifies that its calibration measurements are traceable to the United States National Bureau of Standards, to the extent allowed by the Bureau's calibration facility, and to the calibration facilities of other International Standards Organization members.

WARRANTY

This Hewlett-Packard system product is warranted against defects in materials and workmanship for a period of 90 days from date of installation. During the warranty period, HP will, at its option, either repair or replace products which prove to be defective.

Warranty service of this product will be performed at Buyer's facility at no charge within HP service travel areas. Outside HP service travel areas, warranty service will be performed at Buyer's facility only upon HP's prior agreement and Buyer shall pay HP's round trip travel expenses. In all other cases, products must be returned to a service facility designated by HP.

For products returned to HP for warranty service, Buyer shall prepay shipping charges to HP and HP shall pay shipping charges to return the product to Buyer. However, Buyer shall pay all shipping charges, duties, and taxes for products returned to HP from another country.

HP warrants that its software and firmware designated by HP for use with an instrument will execute its programming instructions when properly installed on that instrument. HP does not warrant that the operation of the instrument, or software, or firmware will be uninterrupted or error free.

LIMITATION OF WARRANTY

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by Buyer, Buyer-supplied software or interfacing, unauthorized modification or misuse, operation outside of the environment specifications for the product, or improper site preparation or maintenance.

NO OTHER WARRANTY IS EXPRESSED OR IMPLIED. HP SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

EXCLUSIVE REMEDIES

THE REMEDIES PROVIDED HEREIN ARE BUYER'S SOLE AND EXCLUSIVE REMEDIES. HP SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY.

ASSISTANCE

Product maintenance agreements and other customer assistance agreements are available for Hewlett-Packard products.

For any assistance, contact your nearest Hewlett-Packard Sales and Service Office.

SAFETY SUMMARY

The following general safety precautions must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument.

Hewlett-Packard Company assumes no liability for the customer's failure to comply with these requirements.

GROUND THE INSTRUMENT.

To minimize shock hazard, the instrument chassis and cabinet must be connected to an electrical ground. The instrument is equipped with a three-conductor ac power cable. The power cable must either be plugged into an approved three-contact electrical outlet or used with a three-contact to two-contact adapter with the grounding wire (green) firmly connected to an electrical ground (safety ground) at the power outlet. The power jack and mating plug of the power cable meet International Electrotechnical Commission (IEC) safety standards.

DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE.

Do not operate the instrument in the presence of flammable gases or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.

KEEP AWAY FROM LIVE CIRCUITS.

Operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made by qualified maintenance personnel. Do not replace components with the power cable connected. Under certain conditions, dangerous voltages may exist even with the power cable removed. To avoid injuries, always disconnect power and discharge circuits before touching them.

DO NOT SERVICE OR ADJUST ALONE.

Do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.

DO NOT SUBSTITUTE PARTS OR MODIFY INSTRUMENT.

Because of the danger of introducing additional hazards, do not install substitute parts or perform any unauthorized modification of the instrument. Return the instrument to a Hewlett-Packard Sales and Service Office for service and repair to ensure that safety features are maintained.

DANGEROUS PROCEDURE WARNINGS.

Warnings, such as the example below, precede potentially dangerous procedures throughout this manual. Instructions contained in the warnings must be followed.

WARNING

Dangerous voltages, capable of causing death, are present in this instrument. Use extreme caution when handling, testing, and adjusting.

SAFETY SYMBOLS

General Definitions of Safety Symbols Used on Equipment or in Manuals.



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



Indicates dangerous voltage (terminals fed from the interior by voltage exceeding 1000 volts must be so marked).



OR



Protective conductor terminal. For protection against electrical shock in case of a fault. Used with field wiring terminals to indicate the terminal which must be connected to ground before operating equipment.



Low-noise or noiseless, clean ground (earth) terminal. Used for a signal common, as well as providing protection against electrical shock in case of a fault. A terminal marked with this symbol must be connected to ground in the manner described in the installation (operating) manual, and before operating the equipment.



OR



Frame or chassis terminal. A connection to the frame (chassis) of the equipment which normally includes all exposed metal structures.



Alternating current (power line).



Direct current (power line).



Alternating or direct current (power line).

WARNING

The **WARNING** sign denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed, could result in injury or death to personnel.

CAUTION

The **CAUTION** sign denotes a hazard. It calls attention to an operating procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product.

NOTE:

The **NOTE** sign denotes important information. It calls attention to procedure, practice, condition or the like, which is essential to highlight.

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GENERAL INFORMATION

The Model 64655A, 8085 Interface Module, provides a dedicated interface between a microprocessor system and the Model 64620S Logic Analyzer. Although both hardware and software are needed to provide this interface, the software element is beyond the scope of this manual. For information in addition to the following brief description please refer to the Model 64655A Operating Manual.

The software portion includes format specification data and a disassembler. The format specification data includes information on which analyzer bits or fields contain address, data and status information, which clock signals to use and their polarities. The disassembler, a set of tables for an inverse assembler program, allows the analyzer to display mnemonics in addition to binary display.

The Module contains circuitry required to interface the Logic Analyzer to the 8085 microprocessor. Its location near the test point helps logic levels. The 8085 Interface Module I.D. code is 55 decimal, 37 hexadecimal.

CAUTION

Remove power from the system before proceeding with the installation.

INSTALLING THE HP 64655A PREPROCESSOR

1. Connect W6 from the small General Purpose Preprocessor card (A2) to J4 on the 8085 Interface Module.
2. Connect W3 from the large General Purpose Preprocessor card (A1) to J3 on the 8085 Interface Module.
3. Lower the Interface Module into the Preprocessor so that the component side fits inside the pod.
4. Fit the Pod Cover hinges into hinge slots on the General Purpose Preprocessor pod. Lower the cover over the Interface Module and fasten down with screws.

CAUTION

To avoid possible damage from static discharge, always connect the wire assembly (W4) from the preprocessor endcap to J5 on the 8085 Interface Module before applying power.

INTERFACE REQUIREMENTS

The 8085 Interface Module will operate with an 8085 microprocessor clocked at rates up to 5 MHz. The Card adds one LS TTL load to all monitored lines (excludes 8085 clock pins 1 and 2) and an interface capacitance of approximately 35 pF.

The Interface Module has user definable wirewrap pins. Inputs must meet the following setup and hold specifications:

64620S Logic Analyzer

Setup	22 nS
Hold	15 nS

TROUBLESHOOTING

If a failure is suspected in the HP 64655A Interface Module, refer to table 1 to isolate the failure. Consult the nearest Hewlett-Packard Sales/Service Office for more information on replacing the failed preprocessor module.

REPLACEABLE PARTS LIST

Table 2 is the list of replaceable parts. The information given for part consists of the following:

- a. The Hewlett-Packard part number and the check digit.
- b. The total quantity (Qty) in the instrument.
- c. The description of the part.

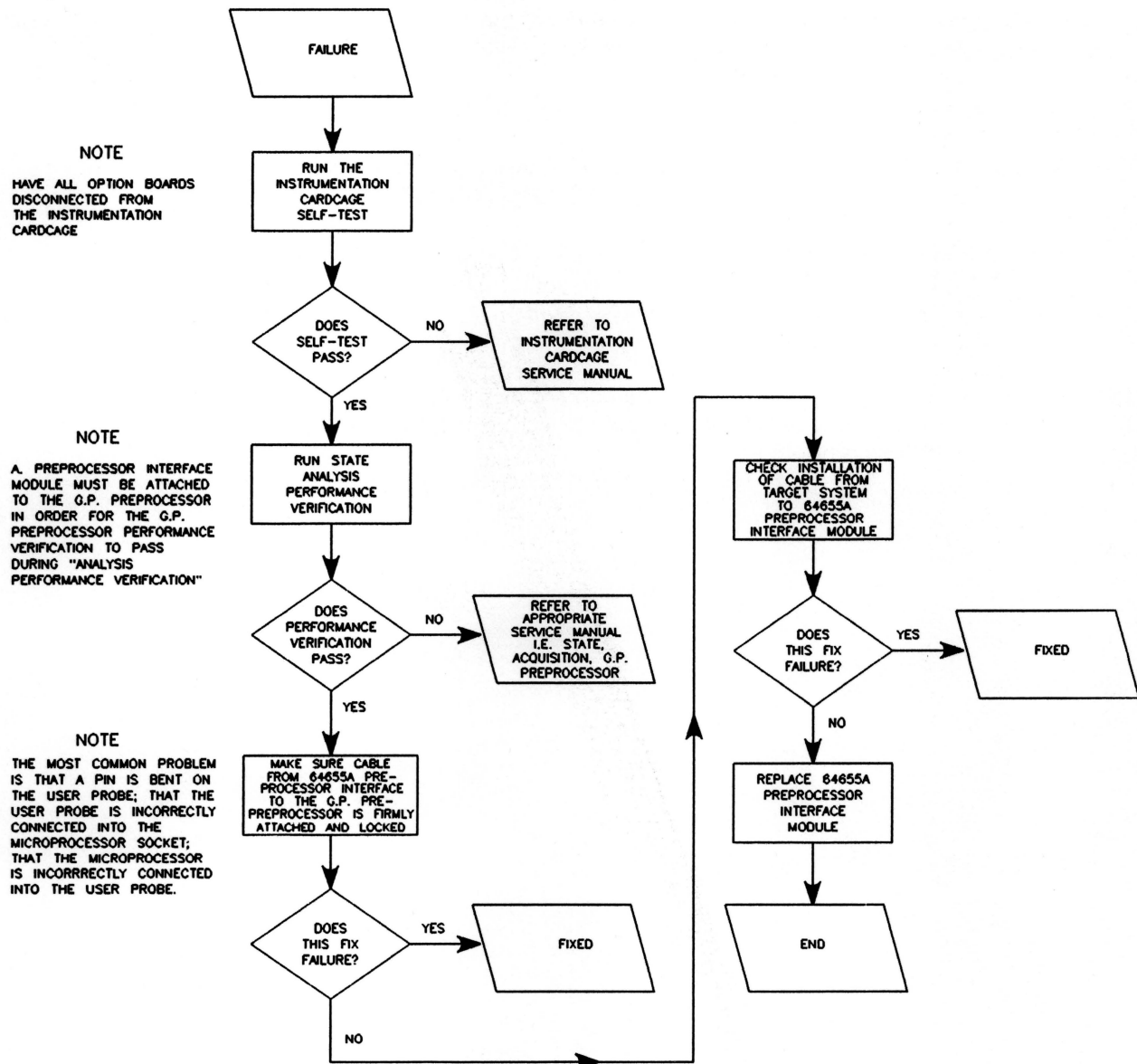
The total quantity for each part is given only once - at the first appearance of the part number in the list.

ORDERING INFORMATION

To order a part listed in the replaceable parts table, quote the Hewlett-Packard part number and check digit, indicate the quantity required, and address the order to the nearest Hewlett-Packard Sales/Service Office.

To order a part that is not listed in the replaceable parts table, include the instrument model number, instrument repair number, the description and function of the part, and the number of parts required. Address the order to the nearest Hewlett-Packard Sales/Service Office.

Table 1. Troubleshooting Flowchart



DIRECT MAIL ORDER SYSTEM

Within the USA, Hewlett-Packard can supply parts through a direct mail order system. Advantages of using the system are as follows:

- a. Direct ordering and shipment from the HP Parts Center in Roseville, California.
- b. No Maximum or minimum on any mail order (there is a minimum order amount for parts ordered through a local HP Office when the orders require billing and invoicing).
- c. Prepaid transportation (there is a small handling charge for each order
- d. No invoices - to provide these advantages, a check or money order must accompany each order.

Mail-order forms and specific ordering information are available through the local HP Sales/Service Office. Addresses and phone numbers are listed in the HP Support Services Reference Manual that is provided with this product.

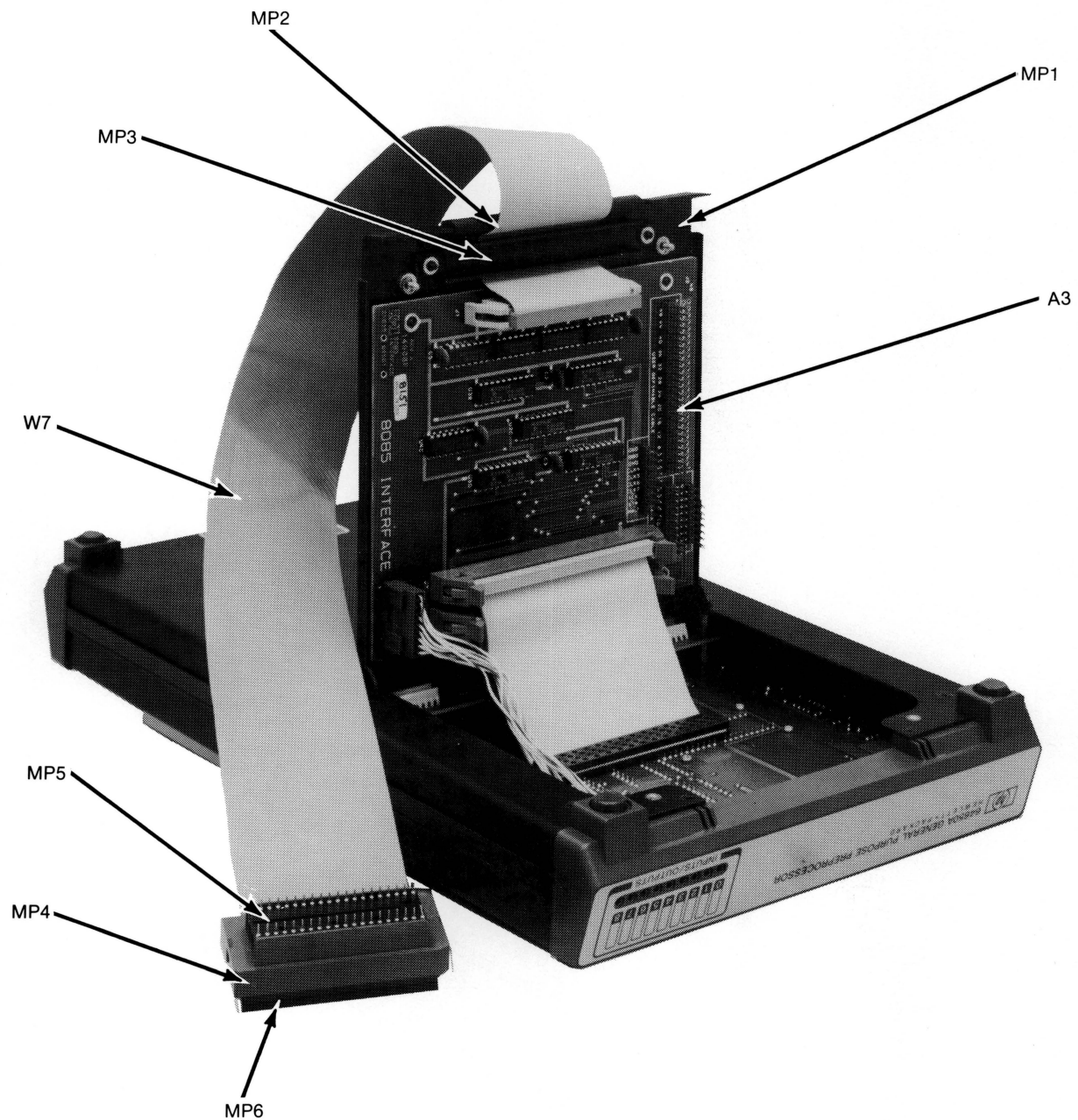


Figure 1. Preprocessor Replaceable Parts Breakdown

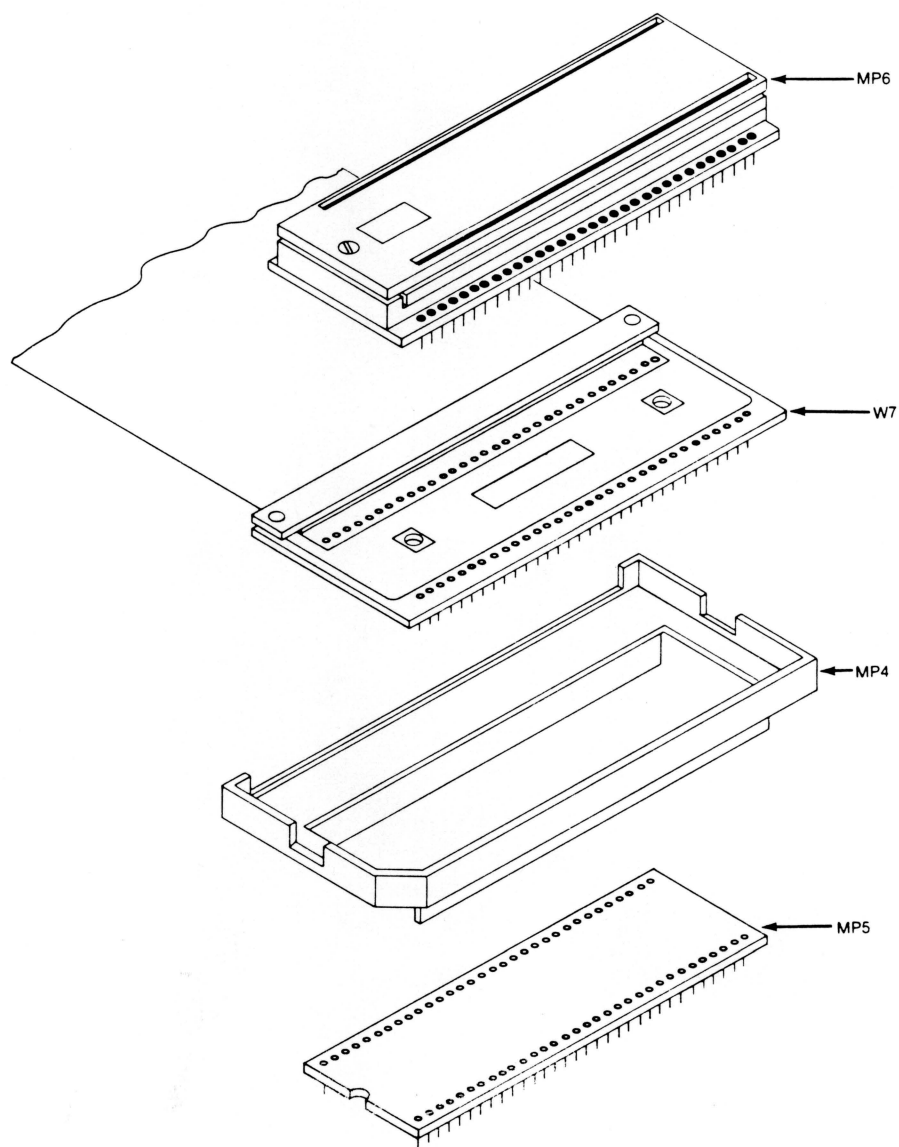


Figure 2. Exploded View of User Plug

Table 2. Replaceable Parts List

REF DES	HP PART NUMBER	C D	QTY	DESCRIPTION
A3	64655-69504	4	1	8085 PREPROCESSOR BOARD-REPLACEMENT
MP1	64655-04101	1	1	POD COVER 8085 INTERFACE CARD
MP2	4320-0095	7	1	U CHANNEL NPRN .047-IN-WD-CHANNEL
MP3	64651-01201	2	1	STRAIN RELIEF BRACKET
MP4	5041-3163	5	1	PIN BASE-40 PIN
MP5	1200-0682	1	2	SOCKET-IC 400-CONT DIP DIP-SLDR
MP6	64651-66504	4	1	ZIF SOCKET BOARD-40
W7	64650-61606	6	1	CABLE ASSEMBLY-8085

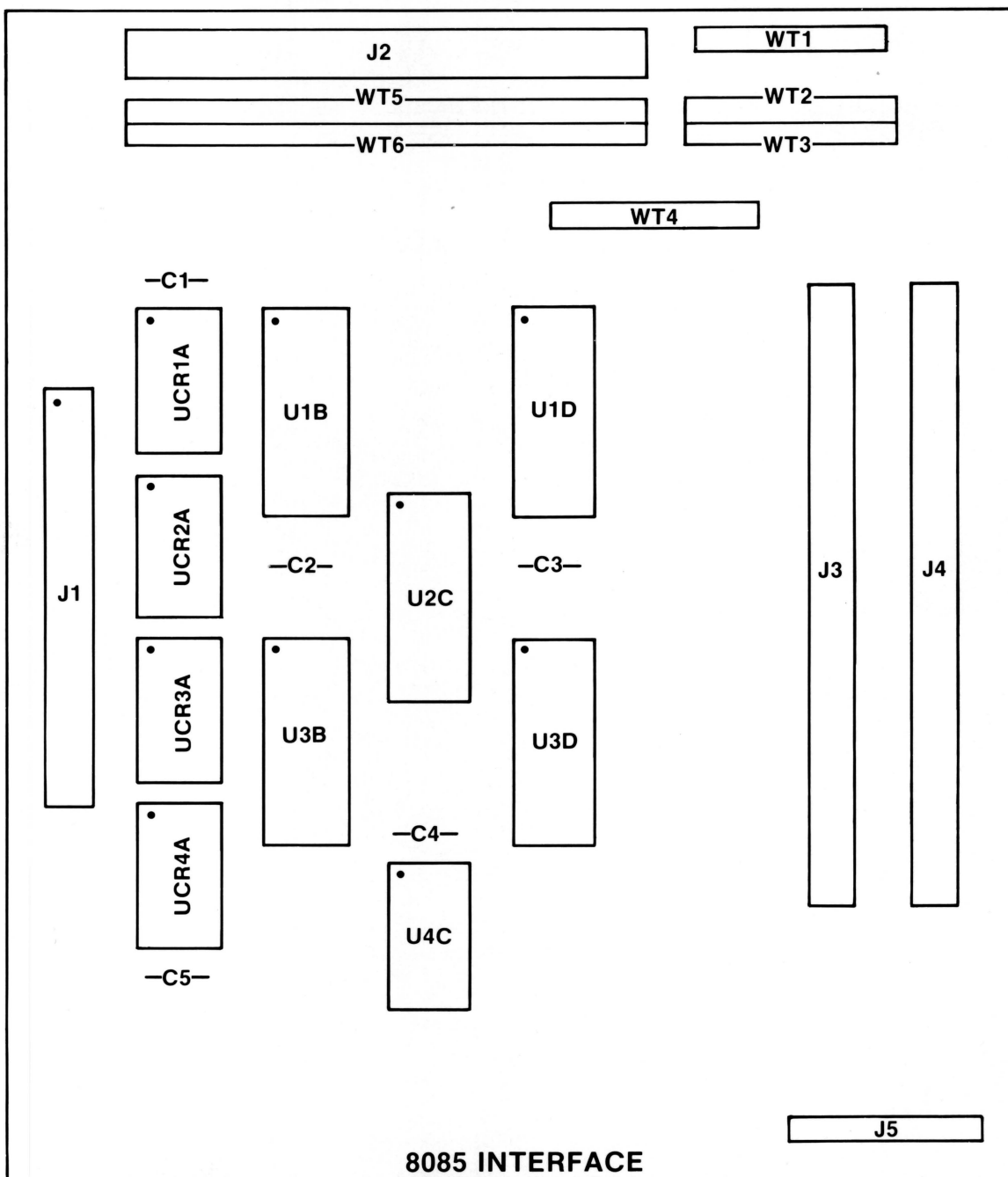
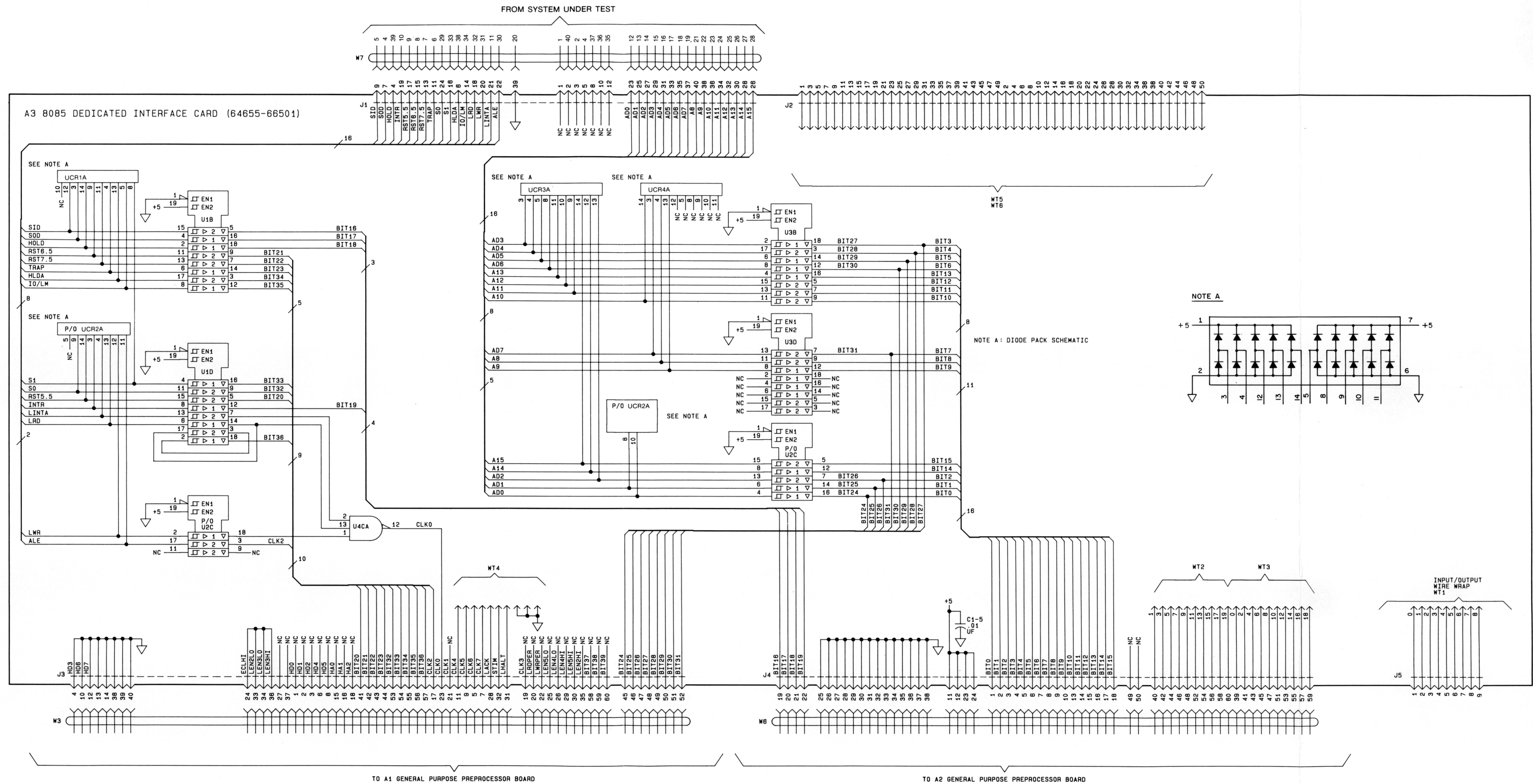


Figure 3. Component Locator



REF DES	HP PART NUMBER	MFR PART NUMBER	VCC +5	GND
U1B	1820-1918	SN74LS241N	20	10
U1D	1820-1918	SN74LS241N	20	10
U2C	1820-1918	SN74LS241N	20	10
U3B	1820-1918	SN74LS241N	20	10
U3D	1820-1918	SN74LS241N	20	10
U4C	1820-0685	SN74S10N	14	7

***** NOTICE *****

This schematic is supplied only as an aid to understanding circuit interface characteristics. It is not intended to be used as a service or troubleshooting aid. This schematic is NOT subject to a revision or change program to keep it current or accurate. ACCORDINGLY, HP SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY ARISING FROM THE USE OF THIS SCHEMATIC.

Figure 4.
Model 64655A Schematic
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NOTES

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