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HP 9000 Series 500 Computer Systems

HP 27130B

8-Channel Multiplexer Interface Card

Installation Manual

Card Assembly: 27130-60001
Date Code A-2529

HEWLETT PACKARD

Hewlett-Packard Company
Roseville Networks Divion
8000 Foothills Boulevard
Roseville, California 95678

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PRINTING HISTORY

The Printing History below identifies the Edition of this Manual and any Updates that are included. Periodically, update packages are distributed which contain replacement pages to be merged into the manual, including an updated copy of this Printing History page. Also, the update may contain write-in instructions.

Each reprinting of this manual will incorporate all past updates; however, no new information will be added. Thus, the reprinted copy will be identical in content to prior printings of the same edition with the user-inserted update information. New editions of this manual will contain new information, as well as updates.

27130-90003

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Second Edition . . . . . September 1985

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This manual provides information for you to install and verify correct operation of the HP 27130B Eight-Channel Multiplexor (MUX) card. You will also need the appropriate computer installation manual. These two manuals should provide all required information. If your installation is such that you need additional information about the MUX card, order the HP 27132A Technical Reference Package from the nearest HP Sales and Support Office.

PREPARATION

Use the following steps to prepare, install and start up the MUX:

1. Determine if you computer system can supply the power needed for the MUX card. See table 1 for power requirements.

Table 1. Power Requirements

Voltage	Current (Amps) (typical)	(2-sigma)	Power Dissipation (Watts) (typical)	(2-sigma)
+ 5 V	1.672 A	1.890 A	8.36 W	9.45 W
+12 V	0.052 A	0.062 A	0.62 W	0.74 W
-12 V	0.075 A	0.085 A	0.90 W	1.02 W

2. Verify that the Memory Configuaration jumper is installed properly for the EPROMs and RAMs installed on the card. The memory jumper is an internally-connected,18-pin, dual in-line package (DIN) shunt network. To verify that the jumper is configured correctly, determine which EPROMs and RAMs are installed in sockets U64 and U74, then refer to Table 2 to verify that the correct jumpers are closed. (Figure 3 shows the jumper plug pins.)

3. Install the card in the appropriate slot in the computer. Refer to the computer system installation manual to determine the correct slot. When installing the card, be careful not to damage components and traces on the card and on adjacent cards. Press the MUX card firmly into place.

4. Connect the cable supplied with the card from J2 to the RS-232-C connection box. If you have ordered the test hood, which exercises more of the card circuitry (part number 0950-1659), connect it to J2 instead of connecting the cable. The test hood can be ordered from the HP Sales and Support Office closest to your installation.

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CAUTION

Be sure to install the diagnostic test hood so that its component side (the side with the LED) matches the component side on the MUX card. Damage to the MUX card can result if the component sides of the two devices do not match.

5. Turn on computer system power.

6. A self-test is contained on the card. The host computer system determines whether the self-test is run automatically at power-on or must be invoked by the user. Refer to the appropriate manual for your system for a description of self-test initiation.

   - If the diagnostic test hood is not installed when the self-test executes, the LED located on the card should light briefly and go out, indicating that the card passed self-test. If the LED either does not light at all, or if the LED stays on, the card did not pass self-test. For either of these latter two cases, return the card to Hewlett-Packard (refer to the "Reshipment" paragraph below for details).

   - If the diagnostic test hood is installed when the self-test executes, the conditions in the paragraph above. should occur, plus the LED located on the test hood should light briefly and go out. If the LEDs (the one mounted on the card and the one mounted on the diagnostic test hood) either do not light at all, or if they light and stay on, the causes are the same as above.

7. Refer to your system documentation for information on using the MUX in your system.

RESHIPMENT

If the MUX is to be shipped to Hewlett-Packard for any reason, attach a tag identifying the owner and indicating the reason for shipment. Include the part number of the MUX.

Remove and retain the EPROM. The I/O and microprocessor should remain on the card. Pack the card in the original factory packing material, if available. If the original material is not available, good commercial packing material should be used. Reliable commercial packing and shipping companies have the facilities and materials to repack the item. BE SURE TO OBSERVE ANTI-STATIC PRECAUTIONS.

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PRODUCT HISTORY

This section provides a brief description of the differences between versions of the MUX with differing Date Codes.

Card Assembly 27130-60001 -- Date Code A-2529

The assembly number was changed (from 5061-4929) to make identification with its product easier. The date code change (from A-2502) marks the use of a new driver which is more reliable than its predecessor.

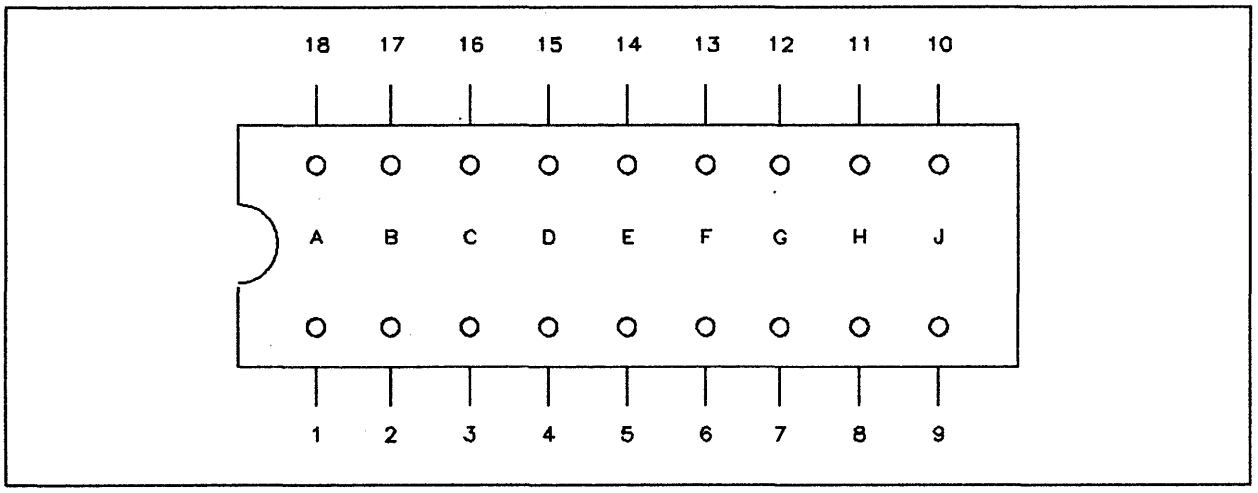


Figure 1. Memory Configuration Jumper

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Table 2. Functions of the Memory Configuration Jumper

Jumper	Function
A	Installed only when a 16K byte EPROM is used in socket U64. Position A connects OCE2- of the Memory Interface Circuit (MIC) to pin 20 (CE-) of the EPROM in socket U64. This enables the EPROM in socket U64 whenever the lower 16K bytes of memeory are addressed.
B	Installed only when a 4K or 8K byte EPROM is used in socket U64. Position B connects OCE0- of the MIC to pin 18 (CE-) of the 4K byte EPROM or pin 20 (CE-) of the 8K byte EPROM, depending on which EPROM is installed in socket U64. This enables the EPROM in socket U64 whenever the lower 8K bytes of memory are addressed.
C	Installed only when a 4K byte EPROM is used in socket U64. Position C connects +5V power to pin 24 (VDD) of the 4K byte EPROM.
D	Installed only when a 16K byte EPROM is installed in socket U64. Position D connects A13 of the address bus to pin 24 (A13) of the 16K byte EPROM.
E	Installed only when an 8K byte EPROM is used on socket U74. Position E connects +5V power to pin 27 (VPP-) of the 8K byte EPROM.
F	Installed only when an 8K byte static RAM is used in socket U74. Position F connects WR- of the Z-80B CPU to pin 21 (WE-) of the static RAM, thus enabling the CPU to write to the RAM.
G	Installed only when when a 2K byte static RAM is installed in socket U74. Position G connects WR- of the Z-80B CPU to pin 21 (WE-) of the static RAM, thus enabling the CPU to write to the RAM.
H	Installed only when a 4K or 8K byte EPROM or an 8K byte static RAM is installed in socket U74. Position H connects A11 of the Z-80B CPU address bus to pin 23 (A11) of the 4K or 8K byte EPROM or 8K byte RAMdepending on which device is installed in socket U74.
J	Installed to enable the MIC wait state signal when slow EPROMs (access time greater than 250 nsec) are used in U64 or U74.

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Table 3. Connector J2 Pin Assignments

J2 Pin No.	J2 Mnemonic	SIO Mnemonic	J2 Pin No.	J2 Mnemonic	SIO Mnemonic
B25	SDO(A)	TxD0	B4	RD0(A)	RxD0
B26	SG0		B6	RD0(B)	
B27	SD0(B)				
A25	SD1(A)	TxD1	A4	RD1(A)	RxD1
A26	SG1		B7	RD1(B)	
A27	SD1(B)				
B28	SD2(A)	TxD2	A6	RD2(A)	RxD2
B29	SG2				
B30	SD3(B)		B8	RD2(B)	
A28	SD3(A)	TxD3	A8	RD3(A)	RxD3
A29	SG3				
A30	SD3(B)		B9	RD3(B)	
B31	SD4(A)	TxD4	A10	RD4(A)	RxD4
B32	SG4				
B33	SD4(B)		B10	RD4(B)	
A31	SD5(A)	TxD5	A12	RD5(A)	RxD5
A32	SG5				
A33	SD5(B)		B11	RD5(B)	
B34	SD6(A)	TxD6	A14	RD6(A)	RxD6
B35	SG6				
B36	SD6(B)		B12	RD6(B)	
A34	SD7(A)	TxD7	B15	RD7(A)	RxD7
A35	SG7				
A36	SD7(B)		B13	RD7(B)	
A17	SD0	TxD0	A21	SD4	TxD4
B17	SC0		B21	SD4	
A18	SD1	TxD1	A22	SD5	TxD5
B18	SC1		B22	SD5	
A19	SD2	TxD2	A23	SD6	TxD6
B19	SC2		B23	SC6	
A20	SD3	TxD3	A24	SD7	TxD7
B20	SC3		B24	SC7	
A3	HOOD_ON-	CTSA0-	A14	SG	—
B3	HLED	—	A16	GND	—
A2	-12V	—	B1	+5V	—
B2	+12V	—	A1	GND (PWR)	

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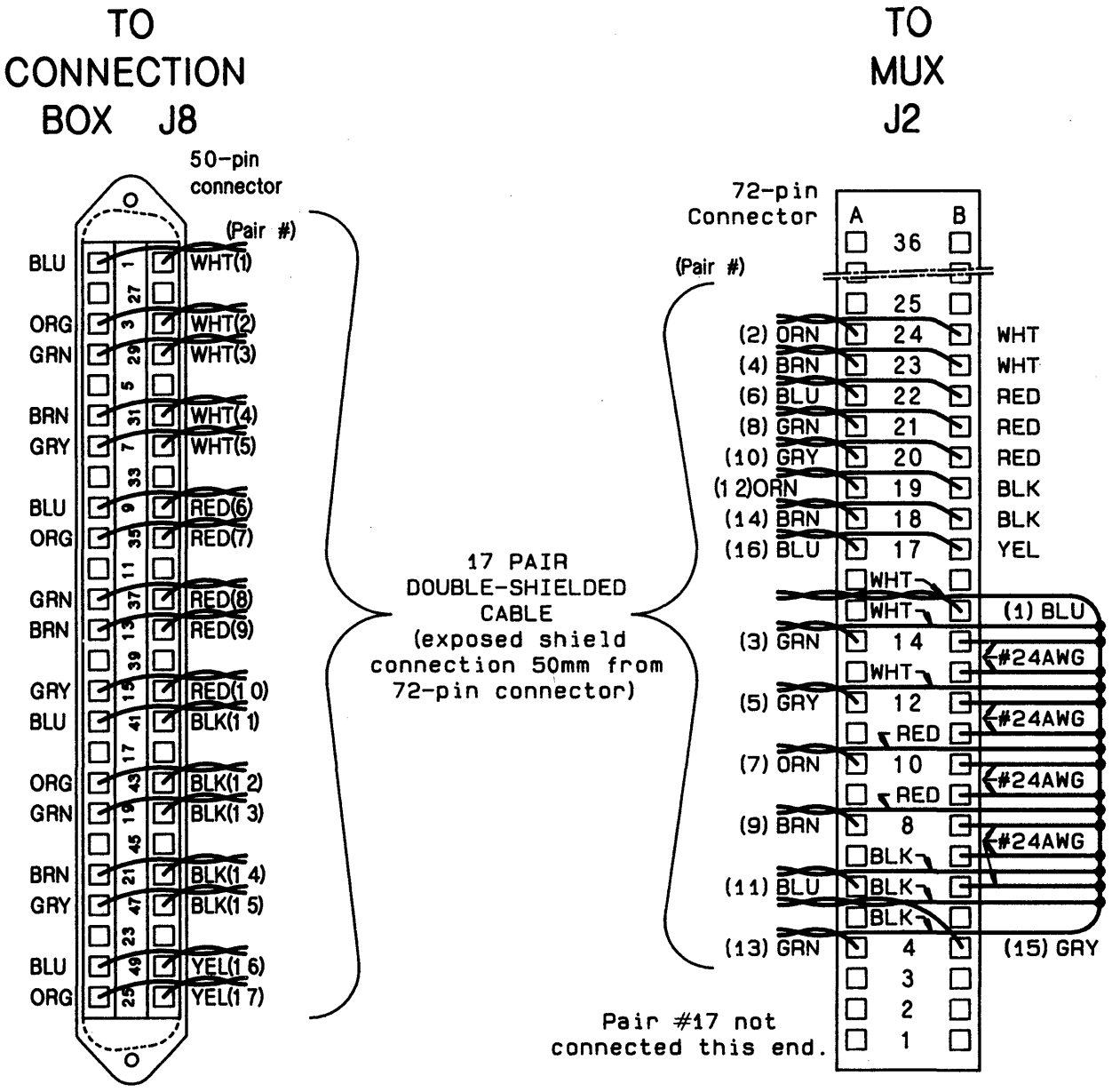


Figure 2. MUX to Connection Box Cable

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Extension Cable Fabrication

The HP 27130B MUX is shipped with an extension cable connector kit to fabricate an extension cable between the MUX card and the 8-port, RS-232-C connection box.

NOTE

This extension Cable should not be longer than 300 feet.

The recommended cable for this application is available through your Hewlet-Packard Sales and Support Office. The part number is 8120-4510.

NOTE

The colored, twisted pairs of wires must be carefully identified in the cable. Each must be connected to a specific terminal pin on the connectors for correct operation of the MUX-to-terminal link. Figure 2 supplies the proper connections for cable fabrication. Each conductor is labeled as to color, and paired wires are pictured twisted and numbered.

Use the instruction sheet supplied with the connector kit and T-tool kit to fabricate your cable.

Optional Brackets for RS-232-C Connection Box

The optional brackets for the RS-232-C connection box allow the box to be mounted in or on the cabinet of the computer or in a 19" EIA rack.

The optional mounting brackets for the RS-232-C connection box are shown in figures 3, 4, and 5.

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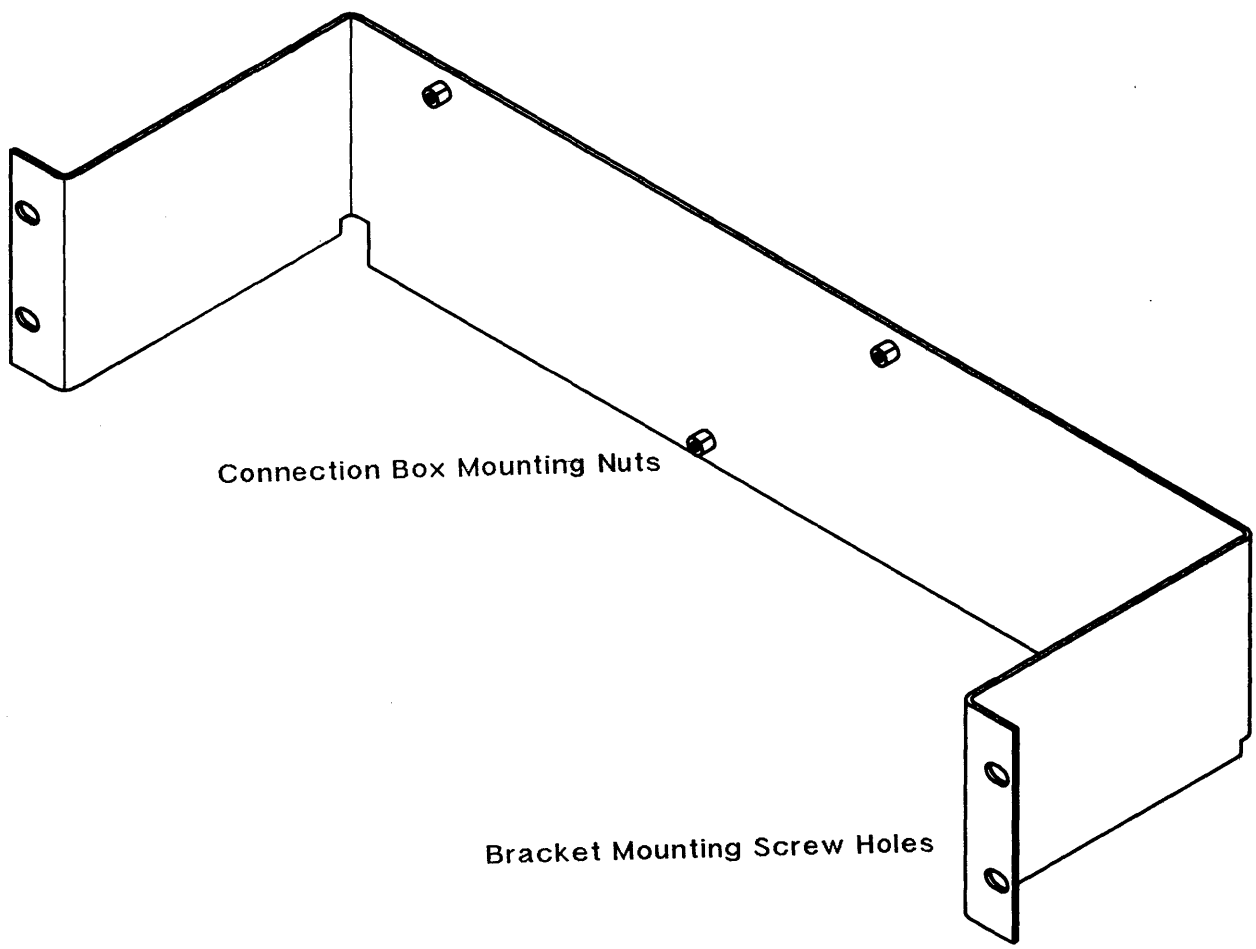


Figure 3. Option #019: Mounting bracket for RS-232-C connection box

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To install bracket in HP 9050A Computer, put top tab in an upper side slot of computer cabinet, lift up and put lower tab in lower slot.

NOTE

This bracket needs eight clear side slots in cabinet.

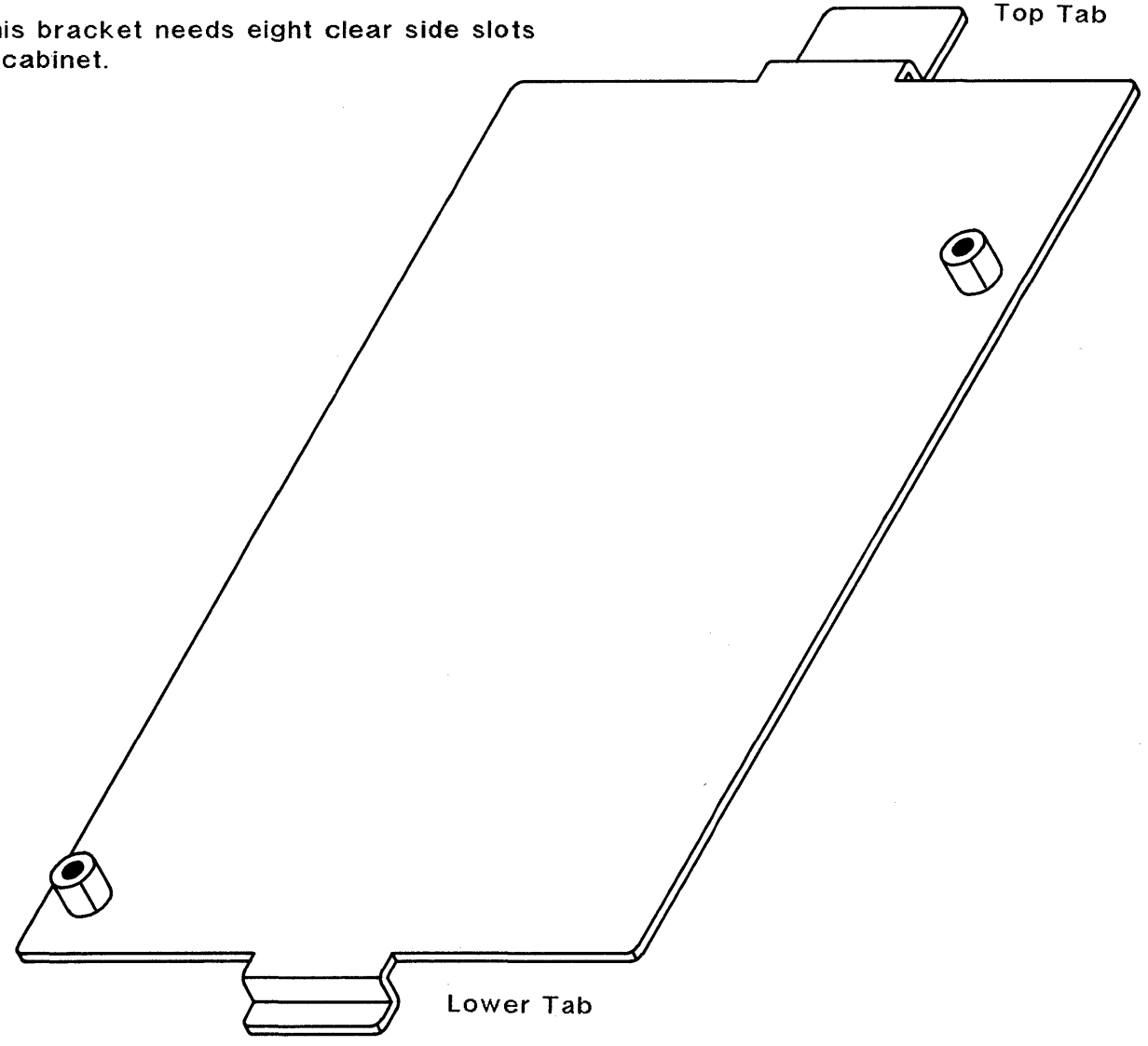


Figure 4. Option #540: Mounting bracket for RS-232-C connection box

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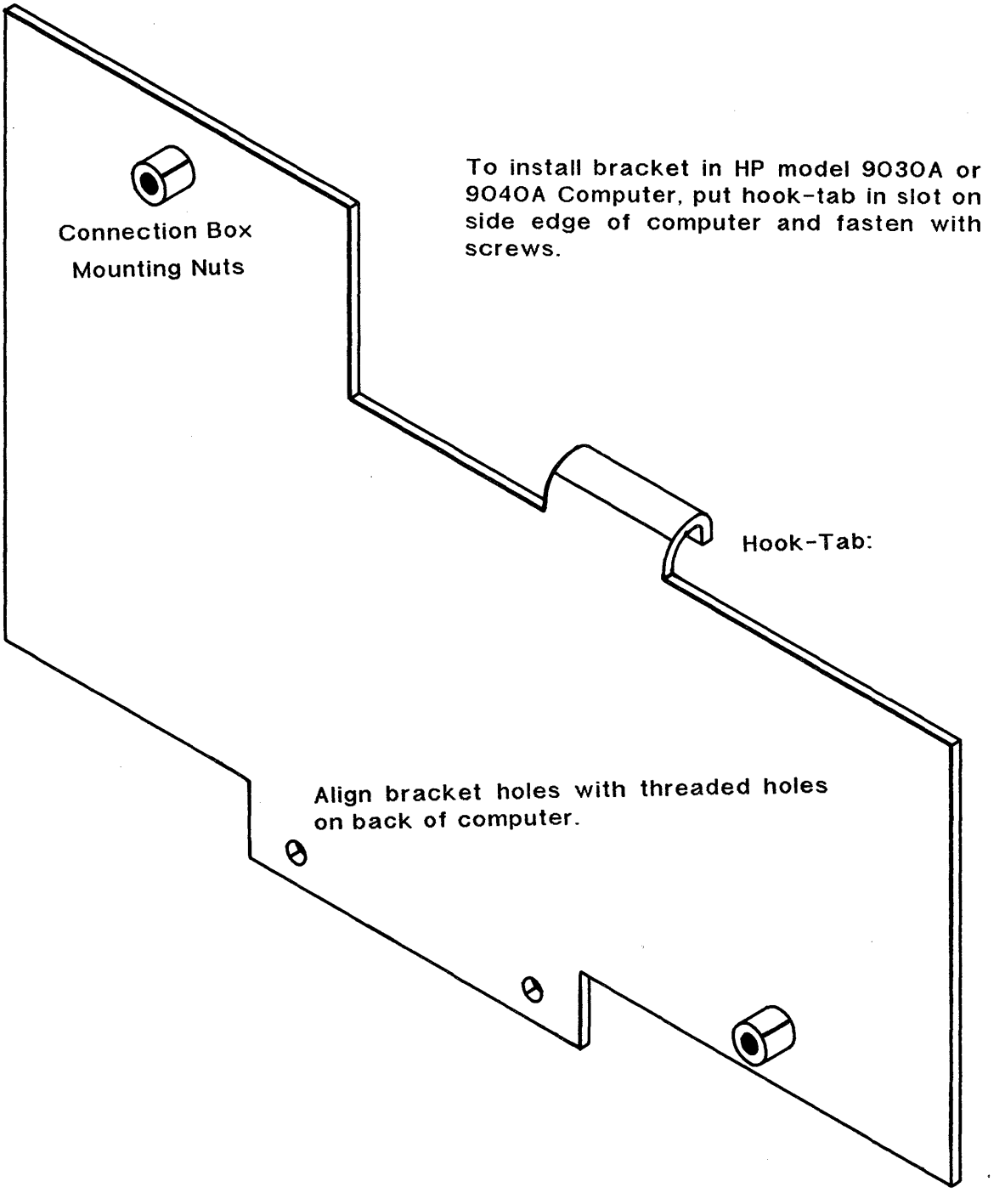


Figure 5. Option #550: Mounting bracket for RS-232-C connection box

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READER COMMENT SHEET

HP 9000 500-Series

HP 27130B EIGHT-CHANNEL MULTIPLEXER
Installation Manual

27130-90003 September 1985

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