

146H 8-CIRCUIT DATA UNIT MOUNTING
DESCRIPTION AND INSTALLATION
"OMNIPORT*" " NETWORK CHANNEL TERMINATING EQUIPMENT

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1. GENERAL

1.01 This practice provides description, application, and installation information for the OMNIPORT NCTE (Network Channel Terminating Equipment) 146H 8-Circuit Data Unit Mounting. Specifications for this mounting are provided in Table A. A general description of OMNIPORT NCTE is listed in AT&T Practice 332-620-100.

1.02 When this practice is reissued, the reason(s) for reissue will be given in this paragraph.

1.03 The 146H mounting is part of the OMNIPORT NCTE family of network equipment for location at the customer premises equipment for voice-frequency special services, maintenance, analog data, and digital services.

2. APPLICATION

2.01 The 146H mounting is used to house up to eight 400-type analog data unit circuit packs at the customer premises. Some combinations of the 146H mounting, power supply, and associated power cord can be ordered as kits. More information on

power supply kits and mounting kits is provided in paragraphs 3.07 through 3.10.

3. DESCRIPTION

A. 146H Mounting

3.01 The 146H mounting, shown in Fig. 1, consists of a metal frame with mounting slots for up to eight 400-type circuit packs, a printed-wire backplane, a 23A fuse block, and a black metal cover. The mounting is 7.5 inches high, 17.6 inches wide, 10.6 inches deep, and weighs 12.5 pounds

3.02 This unit can be mounted on horizontal or vertical surfaces such as a table or wall. Side brackets are also included with the unit to allow mounting in 19- or 23-inch racks or cabinets.

3.03 The printed wire backplane, shown in Fig. 2, provides all the required connections between the circuit packs and the network, customer, and power leads. Eight 56-pin card-edge connectors connect to the circuit packs while seven screw-type terminals accept power supply and ground leads. Four 50-position miniature ribbon plugs terminate the network and customer leads.

3.04 A decal showing the lead plan of the four 50-position plugs and the screw-type terminals is provided on the inside of the unit cover. A copy of this decal is shown in Fig. 3.

3.05 Wire-wrap pins are available on the rear of the backplane for connections to circuit packs that do not match the OMNIPORT NCTE lead plan.

3.06 A 23A fuse block located on the right side of the housing, as shown in Fig. 1, provides current overload protection for each circuit pack. The numbers stamped on the front of the fuse block indicate the circuit pack protected by that fuse.

B. Options

Power Supply

3.07 The 146H mounting can be powered by either -48 volts dc or by ± 12 volts dc supplied to the appropriate power and ground terminals on the mounting backplane. Provisions are made to allow mounting a separately available 11BU or 11BT power supply kit within the housing. Power can also be sup-

plied to the mounting by wall- or receptacle-mounted power supplies. Bulk power may also be used where available.

3.08 A 12-inch, 4-conductor power cable is included with the mounting for connecting between the power supply and the backplane terminals when a 11BT or 11BU power supply is mounted in the housing. The 11BT kit contains a KS-22696, List 9 -48 volt dc power supply that provides up to 1.2 amperes of current. The KS-22696, List 9 power supply is equipped with a 9-foot ac power cord. A 4-foot, 4-conductor cable is included in the kit for connecting to the mounting backplane terminals if the power supply is to be wall-mounted. Similarly, the 11BU kit consists of a KS-22696, List 11 ± 12 volt dc power supply rated at 1.0 amperes, a 9-foot ac power cord, and a 4-foot, 4-conductor cable.

3.09 Available OMNIPORT NCTE receptacle-mounted power supply kits for use with this mounting are listed in AT&T Practice 332-620-100.

3.10 Mounting kits are available that include a 146H mounting and a power supply kit. The 11J mounting kit provides a 146H mounting plus an 11BT -48 volt dc power supply kit. The 11K mounting kit provides a 146H mounting plus an 11BU ± 12 volt dc power supply kit.

KS-21253, List 1 Adapter

3.11 Access to the customer equipment leads on the circuit packs is provided by 50-position miniature ribbon plug P4 on the rear of the mounting backplane. A bracket is supplied with the mounting to support a separately available KS-21253, List 1 adapter, if desired. The cable from plug P4 can be routed to the 50-position miniature ribbon connector J1 in the adapter. The output connections of circuit packs 1 through 8 are then provided on 50-position miniature ribbon plugs P1 through P8 of the adapter, respectively.

149A Apparatus Mounting Assembly

3.12 The 149A apparatus mounting assembly, shown in Fig. 4, is an optional assembly for wall mounting the 146H unit. The 146H assembly consists of a mounting backplate, an adapter bracket, and two releasable hinges that attach to the sides of the mounting. By releasing one of the hinges and allowing the mounting to swing on the other hinge,

convenient access is gained to the mounting backplane during installation and for any subsequent changes in the backplane connections. The 149A apparatus mounting assembly is able to support a total weight of 25 pounds.

3.13 If the 149A apparatus mounting assembly is not used for wall mounting the unit, access to the mounting backplane is obtained by removing the unit from the wall and remounting it after the backplane connections, or changes, have been made.

4. INSTALLATION

A. Location Selection

4.01 The mounting location for the unit must be selected to provide access to a 3-pronged, 60-Hz, 117 volt ac receptacle. The power supplies in the 11BT and 11BU kits have a 9-foot ac power cord. These kits also include a 6-foot, 4-conductor cord for connecting between the power supply and the backplane terminals when the power supply is wall mounted.

B. Options

Power Supply

4.02 Power is supplied to the mounting by connecting power supply leads to the appropriate terminals on the rear of the mounting backplane (Fig. 2). The 11BT and 11BU power supply kits, recommended for use with the 146H mounting, can either be mounted inside the 146H housing or on a wall. Receptacle-mounted power supplies or bulk power sources may also be used, if desired.

4.03 To mount an 11BT or 11BU power supply kit inside the 146H housing:

- Position keyhole brackets on power supply over the three screw holes on inside of housing right side panel (Fig. 5).
- Install screws, through keyhole brackets, into the screw holes and tighten until snug.
- Connect 12-inch power cord (provided with 146H mounting) between power supply and backplane terminals as indicated in Table B. **Do not** plug in power supply at this time.

- Tie power cord to restrainer bracket with cable tie (Fig. 5).

4.04 To wall mount 11BT or 11BU power supply kit:

- Use keyhole brackets on power supply as a template to mark screw locations.
- Drill pilot holes for screws.
- Install top two screws. Leave screw heads extended far enough to engage the keyhole brackets on power supply.
- Position brackets on power supply over screws and tighten screws until snug.
- Install and tighten two bottom screws.
- Connect 4-foot power cord between power supply and backplane terminals as indicated in Table B. **Do not** plug in power supply at this time.

4.05 Connections between OMNIPOINT NCTE receptacle-mounted power supply kits and the backplane terminals are the same as shown in Table B.

4.06 The power supply COM and ACGND terminals are to be strapped together. The power cords provided include a strap between the white and green conductors for this purpose. If a locally made power cord is used, ensure that the COM and ACGND terminals are strapped together.

KS-21253, L1 Adapter

4.07 The KS-21253, L1 adapter is installed as follows:

- Install mounting bracket to the housing, as shown in Fig. 6, using four screws provided.
- Install screws in self-clinching nuts on right side of the mounting bracket. Leave screws extended far enough to engage the keyhole slots on KS-21253, L1 adapter.
- Position adapter on the two screws and tighten screws until snug.

- Install third screw through keyhole slot on left side of adapter into the self-clinching nut on the mounting bracket.

149A Apparatus Mounting Assembly

4.08 Installation of the 149A apparatus mounting assembly is covered in paragraph 4.11.

C. Mounting Methods

Table Mounting

4.09 To mount the 146H unit on a table or desk, install the feet on the bottom of the unit and place the mounting in the desired location. See paragraphs 4.14 and 4.15 for customer and network connection information.

Wall Mounting (Without 149A Apparatus Mounting Assembly)

4.10 To mount the 146H unit on a wall without using the 149A apparatus mounting assembly:

- Hold mounting in desired position and use keyhole slots to mark four screw-hole locations.
- Drill pilot holes for screws.
- Install screws (wood screws are provided). Leave screws extended enough to engage keyhole slots on mounting.
- Make customer and network connections to unit backplane (see paragraphs 4.14 and 4.15).
- Make power and ground connections to backplane terminals if not connected previously (see Table B).

Wall Mounting (With 149A Apparatus Mounting Assembly)

4.11 To mount the 146H unit on a wall using the 149A apparatus mounting assembly:

- Remove hinge-pin sections from mounting assembly by pressing knobs toward center of hinge.

- Mount a hinge-pin section to adapter bracket and mount bracket to side of mounting unit is expected to pivot on (Fig. 4).

- Mount second hinge-pin section to remaining side of mounting frame.

- Use the mounting plate as a template to mark locations for ten screw holes.

- Drill pilot holes for screws.

- Attach mounting plate to wall (wood screws are provided).

- Press hinge-pin knobs toward center of hinge and position knobs in retaining slots.

- Align hinge-pins with keepers on the mounting plate and release knobs from retaining slots.

- Press one of the sets of hinge-pin knobs toward center of hinge to release hinge and allow unit to swing on other hinge.

- Make customer and network connections to backplane (see paragraphs 4.14 and 4.15).

- Make power and ground connections to backplane terminals if not made previously (see Table B).

Rack or Cabinet Mounting

4.12 To mount the 146H unit in a 19- or 23-inch mounting rack or cabinet:

- Install appropriate mounting brackets for mounting in 19- or 23-inch rack or cabinet as shown in Fig. 4.

- Install unit in rack or cabinet.

- Make customer and network connections to unit backplane (see paragraphs 4.14 and 4.15).

- Make power and ground connections to backplane terminals if not connected previously (see Table B).

D. Backplane Connections**Cable Routing**

4.13 Cabling for the backplane connections can enter the mounting from the right or left side of the unit. If the 149A apparatus mounting assembly is used, cabling should enter the mounting from the side the unit is expected to pivot on when opened.

Customer Connections

4.14 Customer equipment connections for circuits 1 through 8 are made to 50-position miniature ribbon plug P4 on the unit backplane. Figure 3 shows the backplane connector lead plans and Table C provides an explanation of the customer interface lead functions. As an alternative, the KS-21253, List 1 adapter can be used to provide individual customer interface connections to each circuit pack. When the adapter is used, connector J1 of the adapter is connected to plug P4 on the unit backplane and customer equipment connections are made using 50-position miniature ribbon plugs P1 through P8 on the adapter. Figure 7 shows the lead plan for the KS-21253, List 1 adapter.

Network Connections

4.15 Network connections are made to the 146H mounting through 50-position miniature ribbon plugs P3, P2, and P1 on the unit backplane. The network transmission leads are connected to plug P3, simplex lead connections are made to plug P2, and access to the manual loopback leads (MLB and MLBG) is provided on plug P1. Figure 3 shows the

lead plan for the backplane connectors. Table D lists the designations and functions of the network interface leads.

E. Final Steps

4.16 Tighten restraining screws on all 50-position miniature ribbon connectors.

4.17 Restrain cables with cable ties.

4.18 If 146H unit is mounted directly to wall, place unit keyhole slots on mounting screws and tighten screws until snug.

4.19 If 146H unit is wall mounted with the 149A apparatus mounting assembly, close the assembly as follows:

- Press hinge-pin knobs toward center of hinge and position knobs in retaining slots.
- Swing assembly closed, align hinge-pins with keepers on mounting backplate, and release knobs from retaining slots.

4.20 Plug power supply into a 3-pronged, 60-Hz, 117 volt ac receptacle.

4.21 Provision circuit packs per local instructions and insert circuit packs in mounting.

4.22 Mark type of service on label below each circuit pack slot.

4.23 Install cover.

TABLE A

146H 8-CIRCUIT DATA MOUNTING SPECIFICATIONS

CLEI CODE	NCMA090A
DIMENSIONS (H, W, D)	7.5 × 17.6 × 10.6 Inches
WEIGHT	12.5 Pounds
TEMPERATURE	
Operating	0° to 50° Celsius
Storage	-40° to 66° Celsius
HUMIDITY	5 Percent to 95 Percent Relative
POWER INPUT REQUIREMENTS	
Voltage	-48 Volts dc or ±12 Volts dc
Current	1.0 Ampere or Greater
INPUT/OUTPUT CONNECTIONS	
Power Leads	Seven Screw-Down Terminals
Customer Leads	One 50-Pin Miniature Ribbon Plug (Plug P4 on Unit Backplane)
	Provision Is Made to Allow Use of a KS-21253, List 1 Adapter for Customer Connections
Network Transmission Leads	One 50-Position Miniature Ribbon Plug (Plug P3 on Unit Backplane)
Simplex Leads	One 50-Position Miniature Ribbon Plug (Plug P2 on Unit Backplane)
Manual Loopback Leads	One 50-Position Miniature Ribbon Plug (Plug P1 on Unit Backplane)

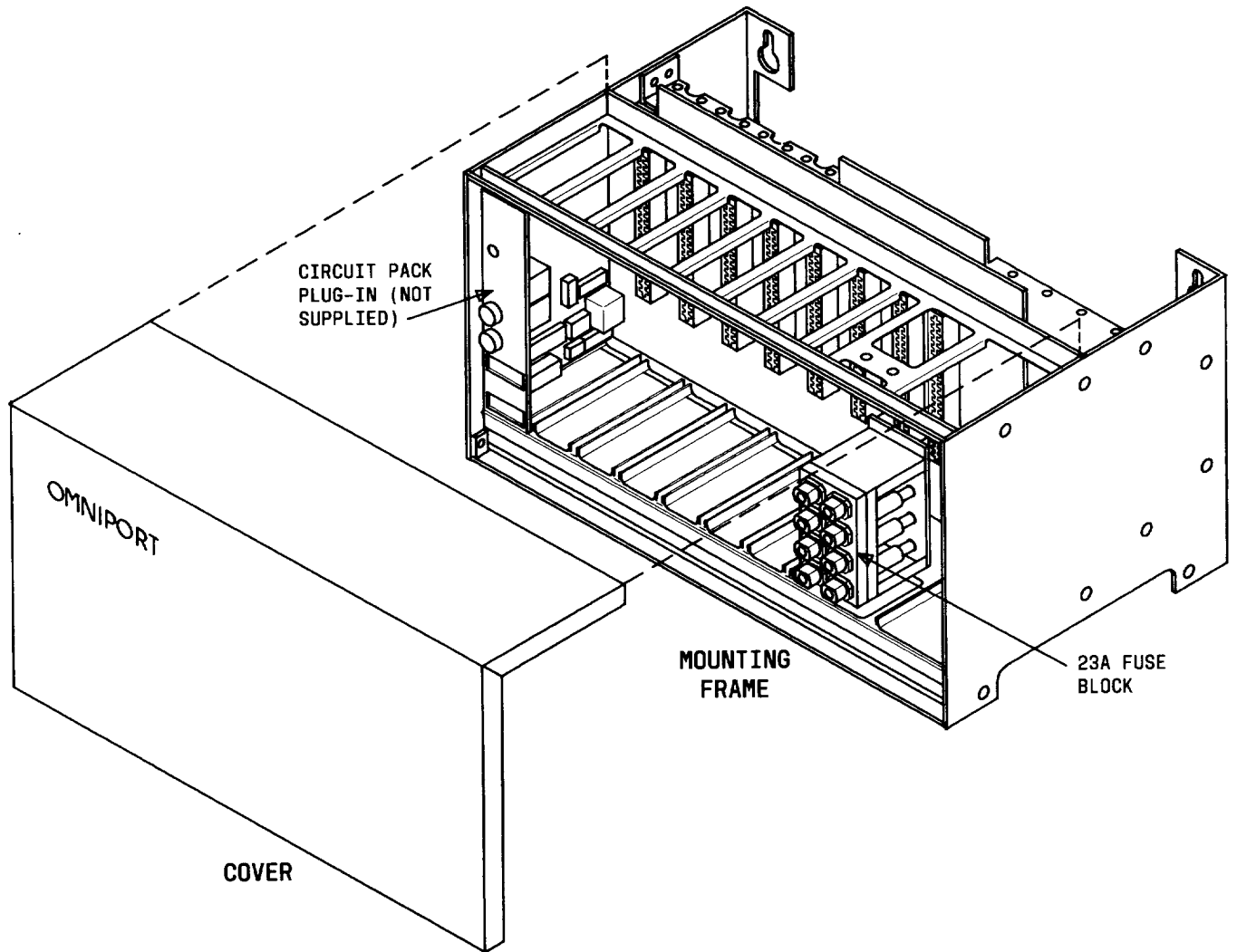


Fig. 1 — 146H Data Unit Mounting

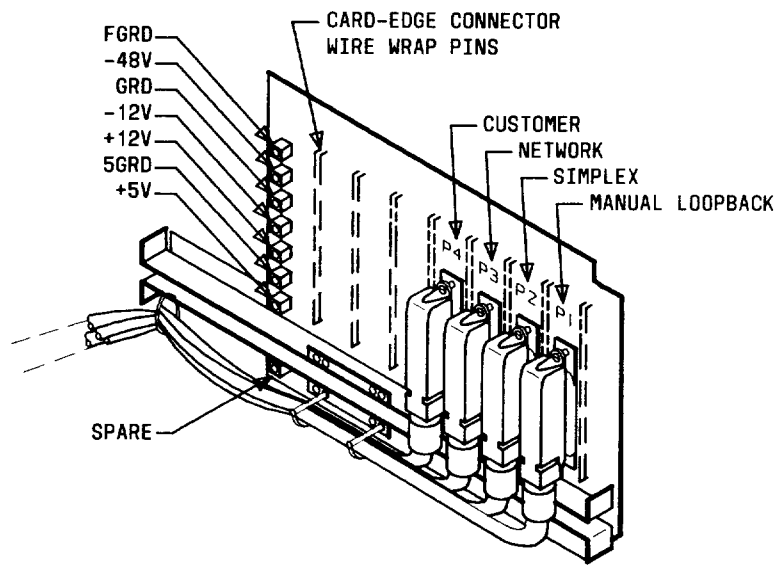


Fig. 2—Rear View of 146H Mounting Backplane

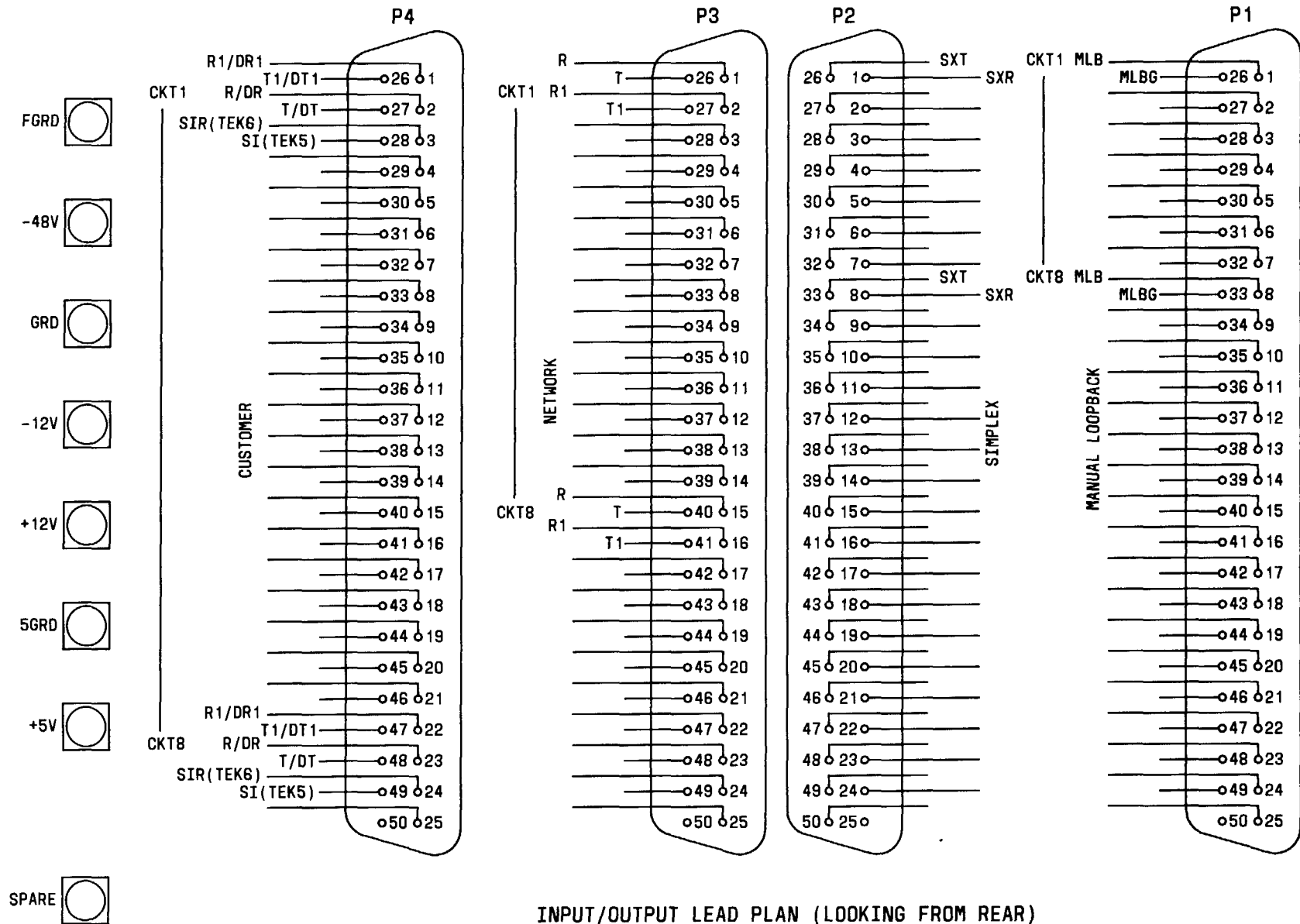


Fig. 3—146H Backplane Lead Plan Decal

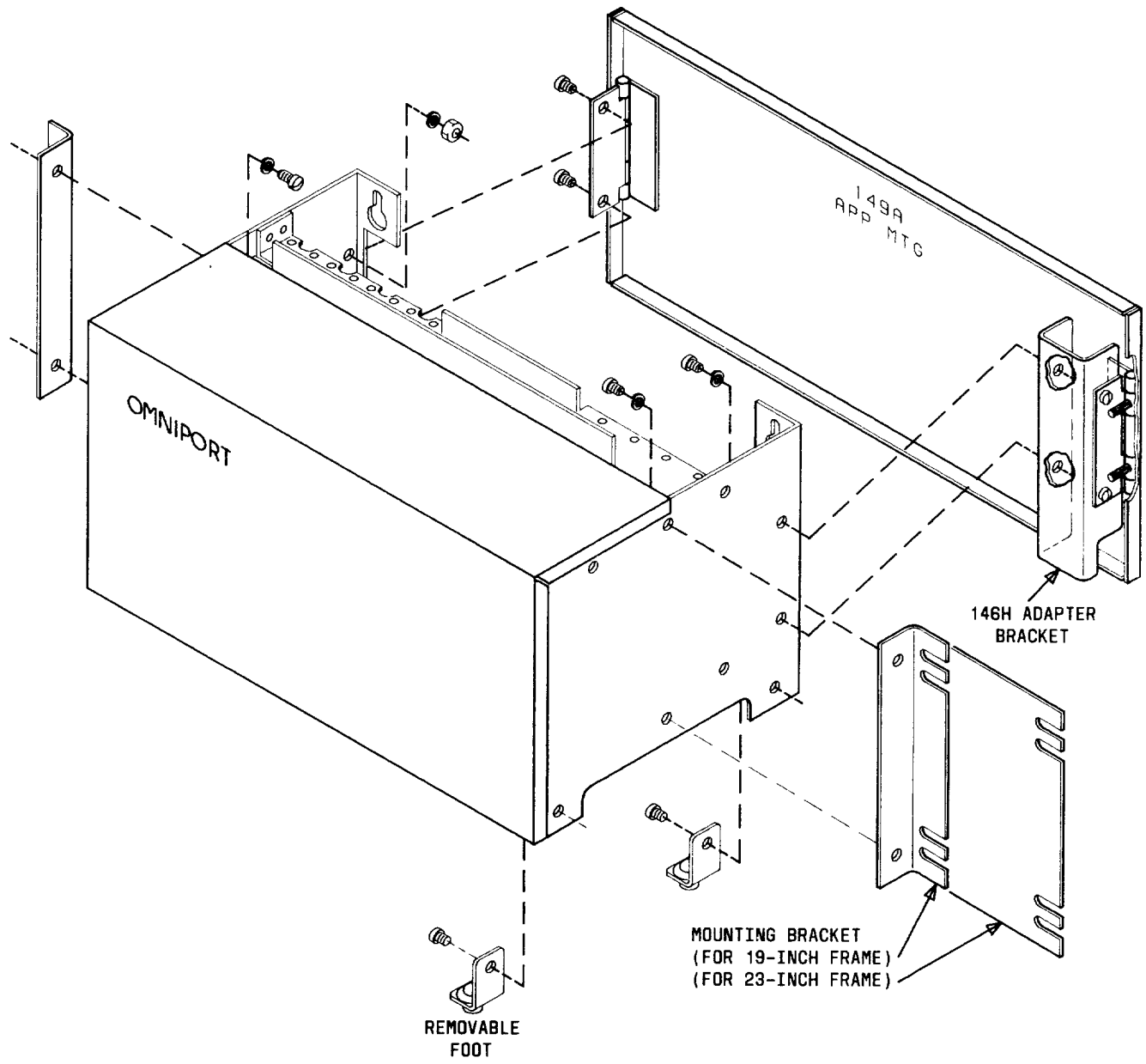


Fig. 4—146H Unit Mounting Options

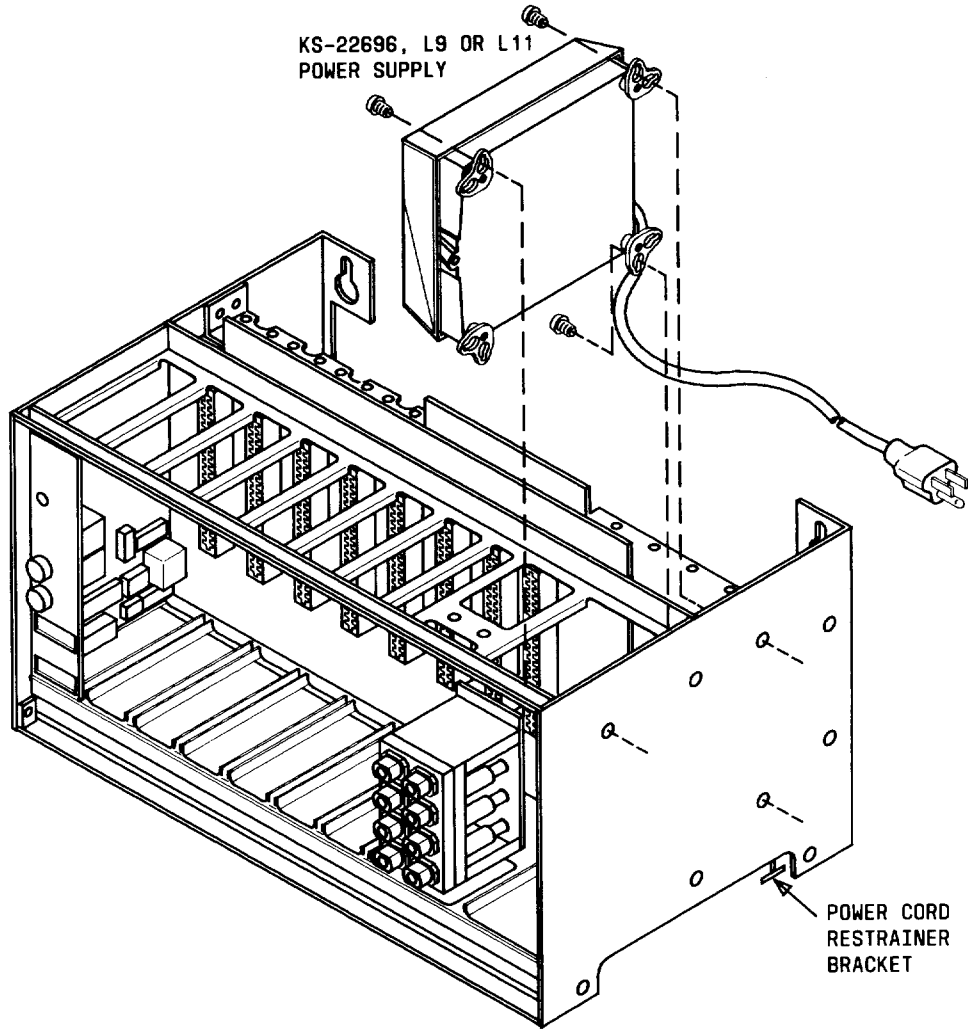


Fig. 5—Installing Power Supply Kit

TABLE B				
POWER CORD CONNECTIONS				
POWER CORD LEAD COLOR	-48 VOLT APPLICATION		+12 VOLT APPLICATION	
	POWER SUPPLY TERMINAL	MOUNTING TERMINAL	POWER SUPPLY TERMINAL	MOUNTING TERMINAL
Red	-48V	-48V	+12V	+12V
Black	*	*	-12V	-12V
White	COM†	GRD	COM†	GRD
Green	ACGND†	FGRD	ACGND†	FGRD

* Cut off unused power lead at both ends of cord.

† Power supply COM and ACGND terminals are to be strapped together. The provided power cord includes a strap between the white and green conductors for this purpose. If a locally made power cord is used, ensure that the COM and ACGND terminals are strapped together.

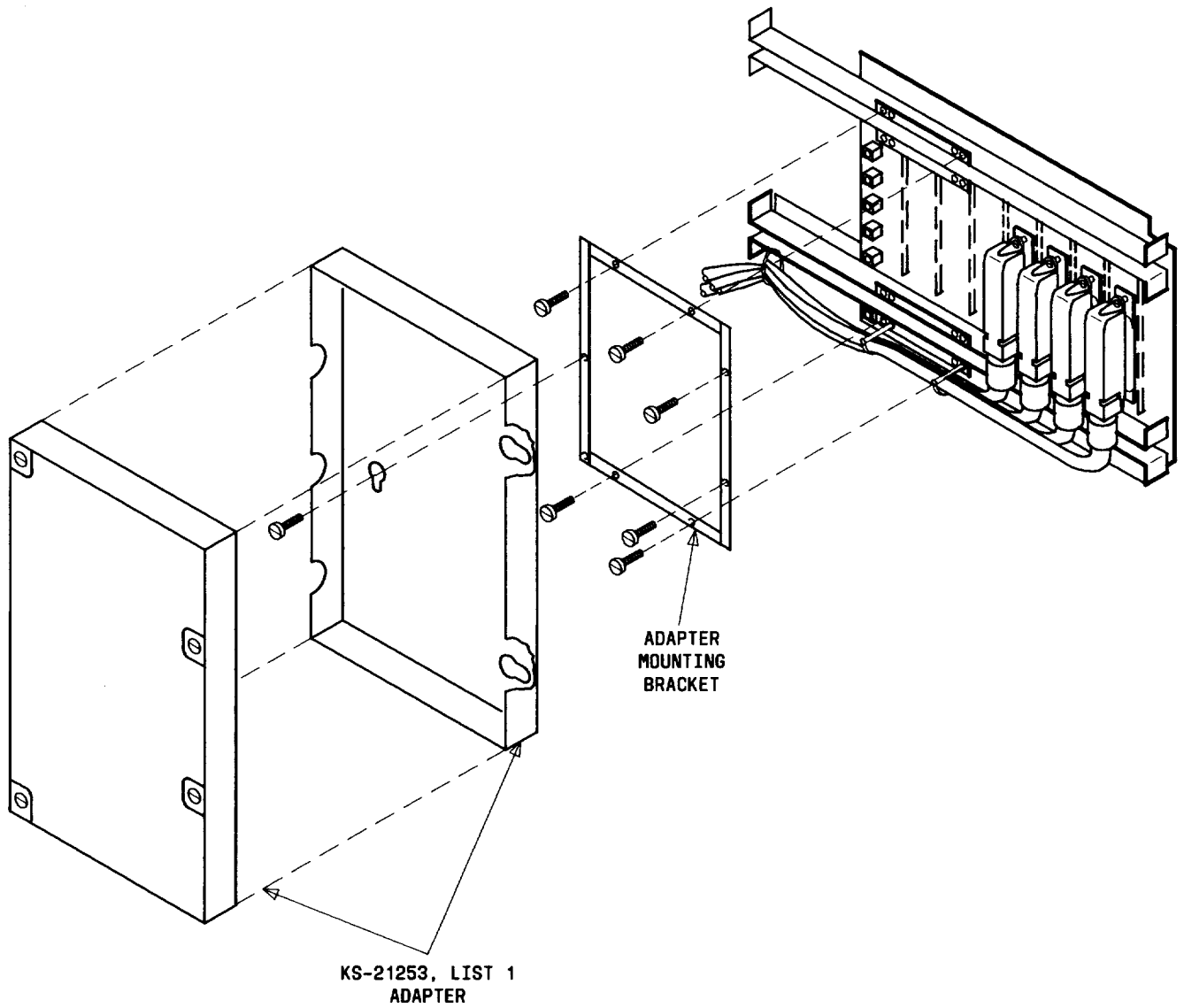


Fig. 6—Installing KS-21253, List 1 Adapter

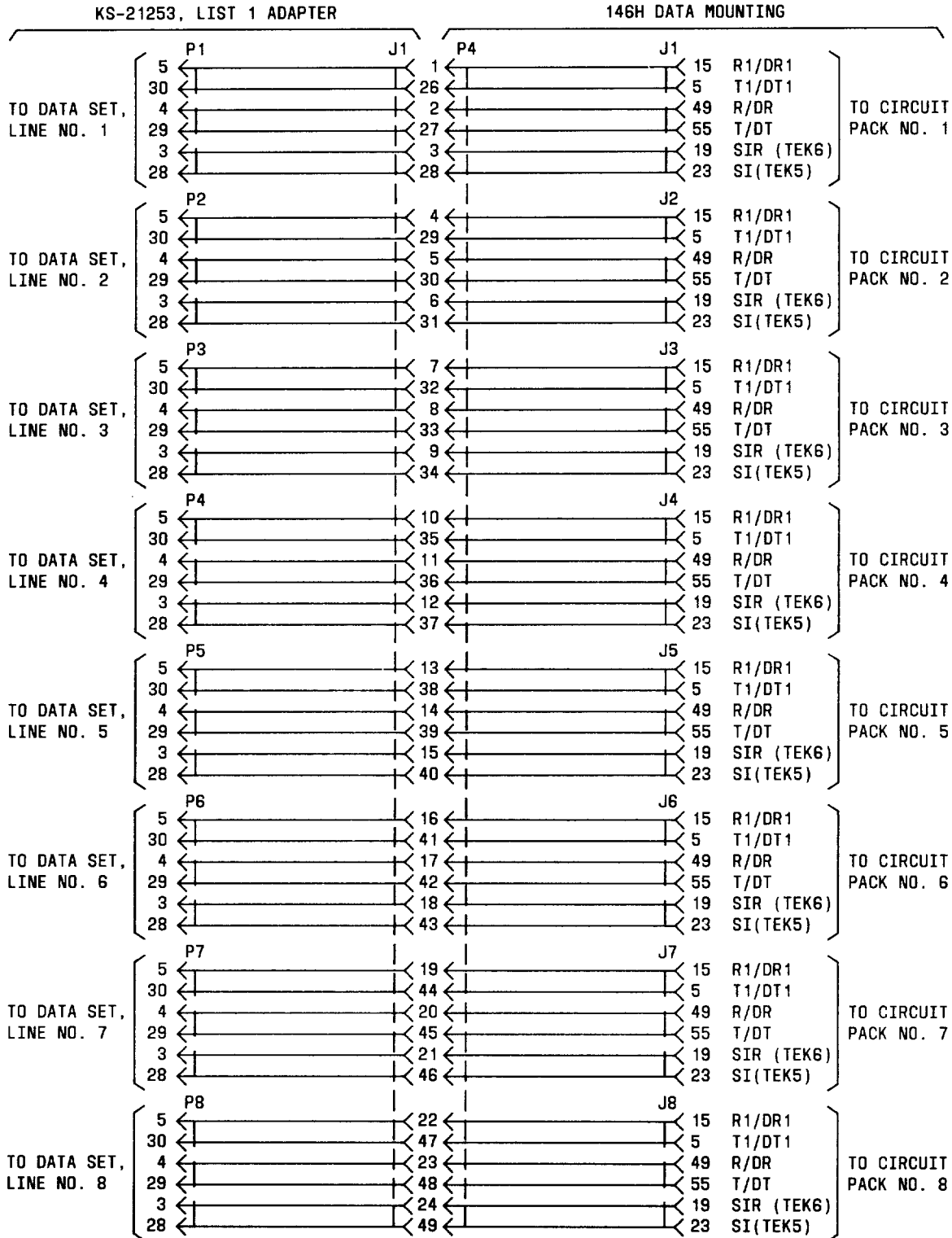


Fig. 7—Lead Plan for KS-21253, List 1Adapter

TABLE C			
CUSTOMER INTERFACE LEAD FUNCTIONS			
DESIG	BACKPLANE CONNECTOR (NOTE)	CARD-EDGE CONNECTOR PIN	LEAD FUNCTIONS
T/DT	P4	55	Tip Toward Customer or Data Tip Toward Customer
R/DR	P4	49	Ring Toward Customer or Data Ring Toward Customer (T/DT and R/DR Leads Are Transmit and Receive Pair for 2-Wire Services, or Transmit Input Pair for 4-Wire Services)
T1/DT1	P4	5	Tip 1 Toward Customer or Data Tip 1 Toward Customer
R1/DR1	P4	15	Ring 1 Toward Customer or Data Ring 1 Toward Customer (T1/DT1 and R1/DR1 Leads Are Receive Output Pair for 4-Wire Services)
SI (TEK5)	P4	23	Status Indicator Toward Customer
SIR (TEK6)	P4	19	Status Indicator Return Toward Customer
Note: The 50-position connector pin assignments are shown in Fig. 3.			

TABLE D
NETWORK INTERFACE LEAD AND TERMINAL FUNCTIONS

DESIG	BACKPLANE CONNECTOR (NOTE)	CARD-EDGE CONNECTOR PIN	LEAD FUNCTIONS
T	P3	7	Tip Toward Network
R	P3	13	Ring Toward Network (T and R Leads Are Receive Input Pair for 4-Wire Services)
T1	P3	41	Tip 1 Toward Network
R1	P3	47	Ring 1 Toward Network (T1 and R1 Leads Are Transmit and Receive Pair for 2-Wire Services, or Transmit Output Pair for 4-Wire Services)
SXT	P2	43	Transmit Simplex Lead Toward Network
SXR	P2	9	Receive Simplex Lead Toward Network
MLB	P1	39	Manual Loopback
MLBG	P1	37	Manual Loopback Return (MLB and MLBG Leads Are Used to Locally Activate the Circuit Pack Maintenance Feature)
-48V	-48V	35	-48 Volt Battery Supply
GRD	GRD	17	-48 Volt and +12 Volt Battery Supply Ground (COM)
+12V	+12V	10	+12 Volt Battery Supply
-12V	-12V	48	-12 Volt Battery Supply
+5V	+5V	26	+5 Volt Battery Supply
5GRD	5GRD	28	+5 Volt Battery Supply Ground
FGRD	FGRD	52	Frame Ground (ACGND)
SPARE	SPARE	18	Spare Bus

Note: The location of the power and ground terminals and the 50-position connector pin assignments are shown in Fig. 3.