
DRV1J-SA/SF

DRV1J–SA/SF Parallel Line Interface Module Option

Installation Guide

Order Number EK–DRV1J–IN–003

Prepared by
U.S. Area EIC Publication Services

Digital Equipment Corporation • Merrimack, NH 03054

First Printing, December 1987
Revised, April 1989
Revised, March 1991

The postpaid READER'S COMMENTS form on the last page of this document requests the user's critical evaluation to assist in preparing future documentation.

This document was prepared using VAX DOCUMENT, Version 1.2

Contents

Chapter 3 Testing the New Configuration

Figures

Tables

Preface

This installation guide provides the information and procedures necessary to install the DRV1J-SA/SF option kit in the BA200-series microsystem enclosure.

Intended Audience

This document is ONLY intended for use by Digital Field Service personnel or by qualified self-maintenance customers who have purchased the MicroVAX System Maintenance Kit (Order No. ZNABX-GZ, C5) or the MicroPDP-11 Systems Maintenance Kit (Order No. ZYABX-GZ, P5).

For the Customer

The DRV1J-SA/SF parallel line interface module option kit is designed for use in the BA200-series enclosure.

It is the customer's responsibility to perform a software backup prior to the arrival of Digital Field Service at the site. This step is important to ensure that data is not lost during any installation process.

If you are not qualified to perform the installation of the DRV1J-SA/SF option kit, call Digital Field Service to schedule an installation.

If you are to perform the installation of the DRV1J-SA/SF option kit, make sure you use a grounded wrist strap and grounded work surface before you handle the modules. The system modules are susceptible to damage by static discharge. Also, ensure the bus grant continuity path

is intact after the installation; no vacant backplane slots should exist between modules.

To install the DRV1J-SA/SF option kit, carefully follow the installation procedure in Chapter 2. If you have any difficulty in performing the installation, call Digital Field Service for assistance.

For Field Service

The DRV1J-SA/SF parallel line interface module option kit is intended for installation in the BA200-series enclosure only.

Be sure to take anti-static precautions when unpacking and installing the module. Use the groundstrap and anti-static mat found in the Anti-static Kit, P/N 29-26246-00.[1]

To install the DRV1J-SA/SF option kit, carefully follow the installation procedure in Chapter 2.

When you have completed the installation, submit a LARS form. For information on completing this form, contact your unit manager.

Refer to the *MicroVAX System Maintenance Guide* (EK-O01AA-MG-001) and the *MicroPDP-11 Systems Maintenance Guide* (AZ-FI11A-MG) for further information.

[1] The Anti-static Kit is not included in this installation kit. It is part of the Field Service tool kit.

Associated Documents

Title	Order Number
DRV11-J Parallel Line Interface User's Guide Guide	EK-DRV1J-UG
MicroVAX System Maintenance Guide[1]	EK-O01AA-MG
MicroPDP-11 Systems Maintenance Guide[2]	AZ-FI11A-MG
MDM User's Guide	AA-FM7A-DN

[1]This document is included in the MicroVAX System Maintenance Kit (ZNABX-GZ, C5).
[2]This document is included in the MicroPDP-11 Systems Maintenance Kit (ZYABX-GZ, P5).

Notes, Cautions, and Warnings

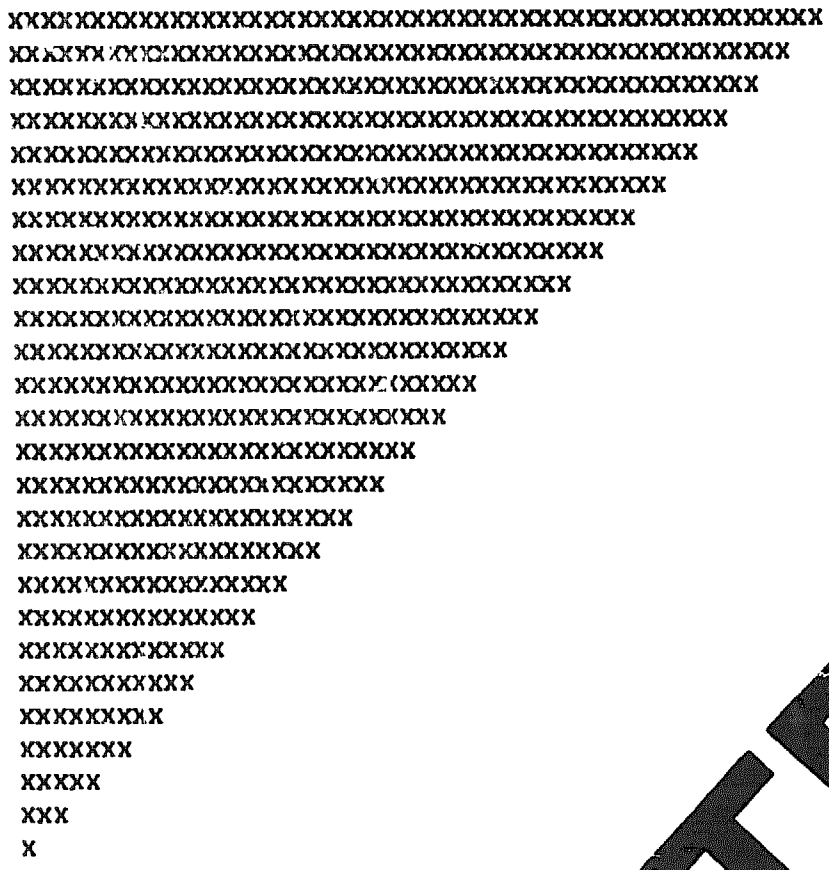
Throughout this manual Notes, Cautions, and Warnings have the following meanings:

NOTE:	The information is important to the understanding of the process being described.
CAUTION:	The information describes a process that can damage the equipment or software.
WARNING:	The information describes a process that can harm the user

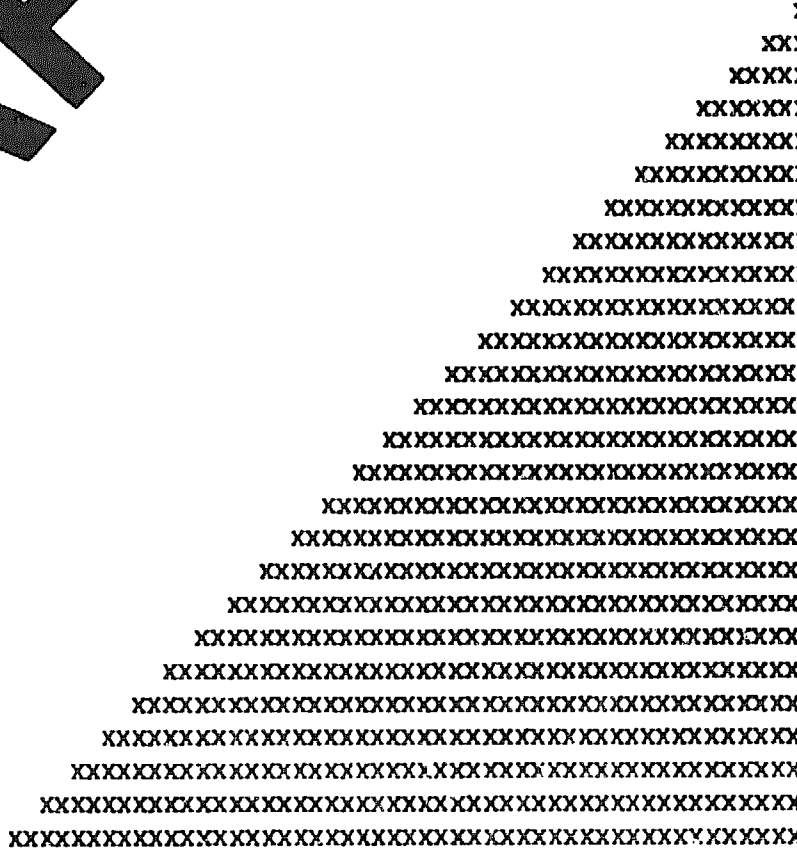
FCC USER STATEMENT

WARNING

This equipment generates, uses, and may emit radio frequency energy. The equipment has been type tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such radio frequency interference. Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.



CHAPTER 1



Chapter 1

Description

This chapter describes the BA200-series enclosure and the DRV1J-SA/SF module.

1.1 BA200-Series System Enclosure

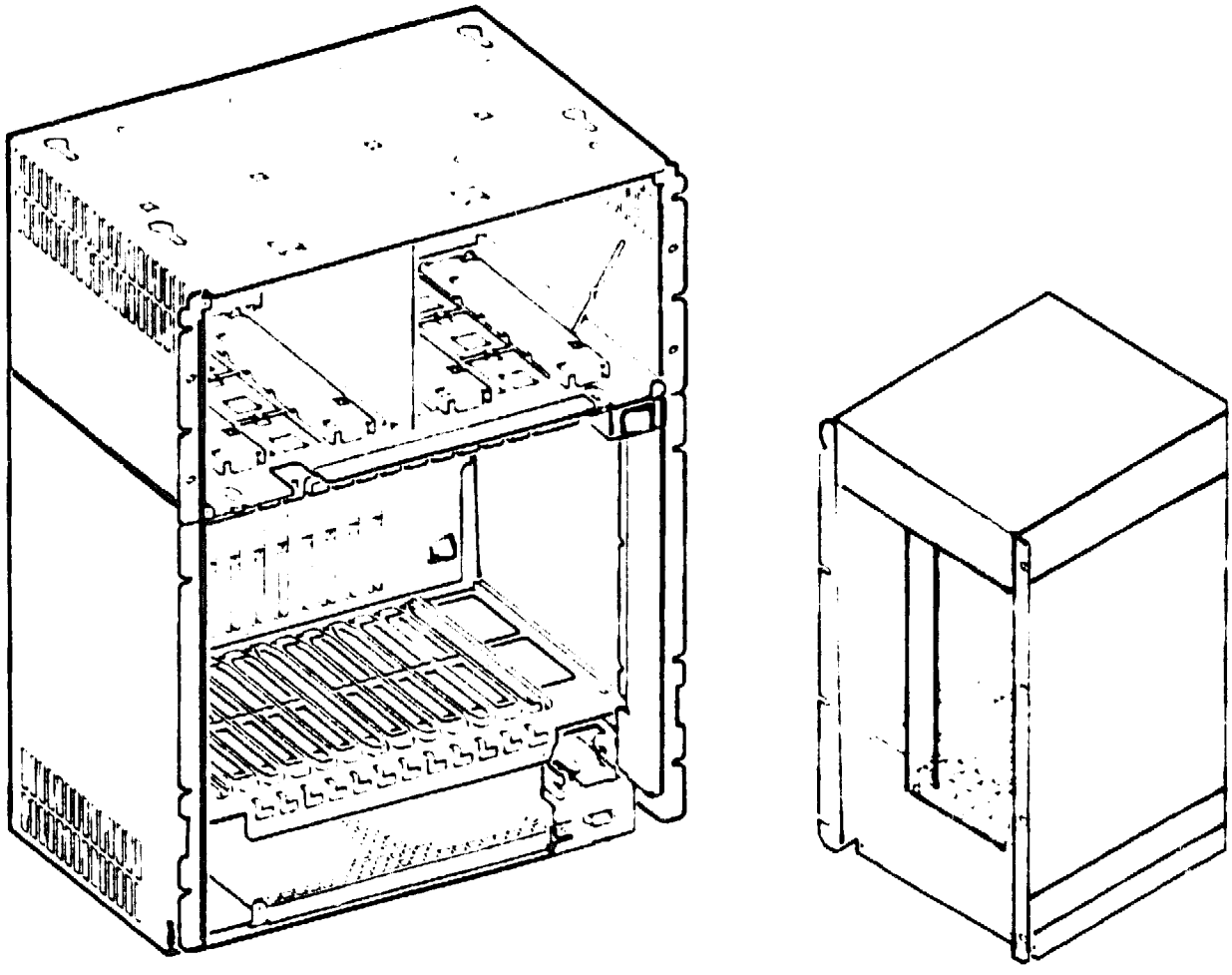
The BA200-series enclosure has a 6- or 12-slot, Q-bus backplane and one or two modular power supplies. Figure 1–1 shows the 12-slot BA213 and the 6-slot BA214 enclosure chassis.

The backplane implements the Q22-bus on the AB rows of each slot. The CD interconnect is implemented on the CD rows of each slot. Fixed disk drives face the rear of the enclosure, providing easy access to the drive signal and power cables. A TK tape drive faces the front of the enclosure.

BA200-series enclosures with mass storage areas can hold up to four standard 13.3 cm (5.25 in) devices (three disk drives and one tape drive). Fixed disk drives face the rear of the enclosure, providing easy access to the drive signal and power cables. A TK50 drive faces the front of the enclosure.

The major difference between the BA200-series and other microsystem enclosures is in the way you connect external devices to the system. Option modules in the BA200-series enclosure connect directly to external I/O connectors. Other enclosures require an insert panel and internal cabling between the option module and the device.

Figure 1–1: BA200-Series Enclosures



There are two main differences between the modules used in the BA200-series enclosure and the modules used in the other microsystem enclosures.

- Option modules with external I/O connectors have bulkhead handles. These handles replace the insert panels and internal cabling found in the BA23 and BA123 enclosures.

- Modules without external I/O connectors (such as memory modules) have blank bulkhead covers.

The module handles and blank covers form an electrical seal that complies with regulations for EMI (electromagnetic interference) for (1) keeping radio frequency interference generated by the system in the enclosure, and (2) keeping radio frequencies out of the enclosure. The module handles and blank covers also help to guarantee proper airflow.

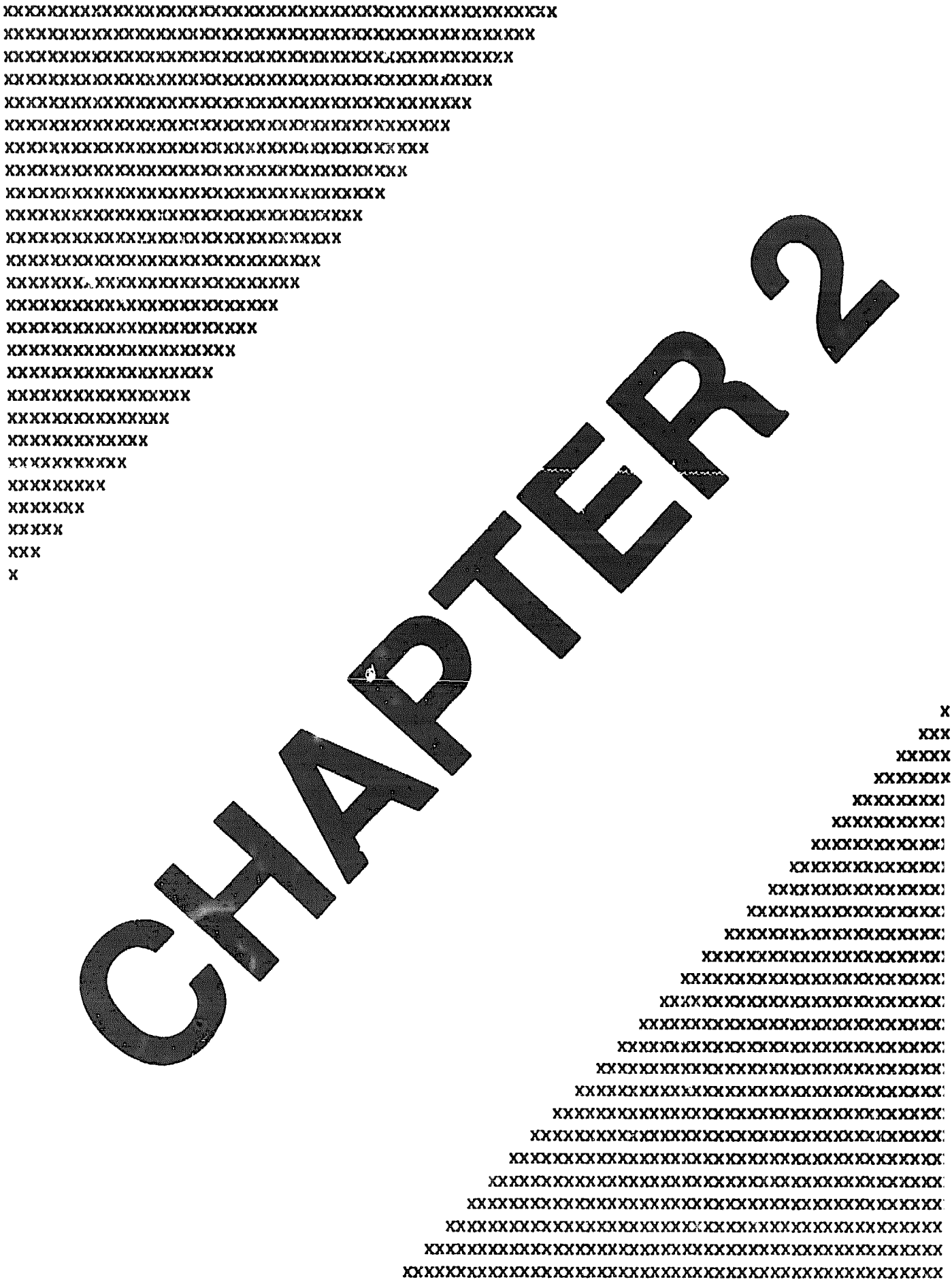
See the *MicroVAX System Maintenance Guide* for further information on the BA200-series (BA213) enclosure.

1.2 DRV1J-S

The DRV1J-S is a parallel line interface module. It contains four programmable ports. Each port contains 16 I/O lines and is capable of transferring a 16-bit word between the Q-bus and the user device. Two handshake control lines are used.

The DRV1J-S is functionally equivalent to the DRV11-J module. The DRV1J version is designed for use in BA-200 series cabinets. The DRV11-J module is designed for use in other Digital Equipment Corporation cabinet enclosures.

See the *DRV11-J Parallel Line Interface User's Guide*, provided with the option kit, for a detailed overview of the DRV1J-S module.


CHAPTER 2

Chapter 2

Installation

This chapter provides step-by-step procedures for unpacking, inspecting, and installing the DRV1J-SF option kit in the BA200-series enclosure. This chapter also discusses system and module configuration.

2.1 Unpacking the Optior. Kit

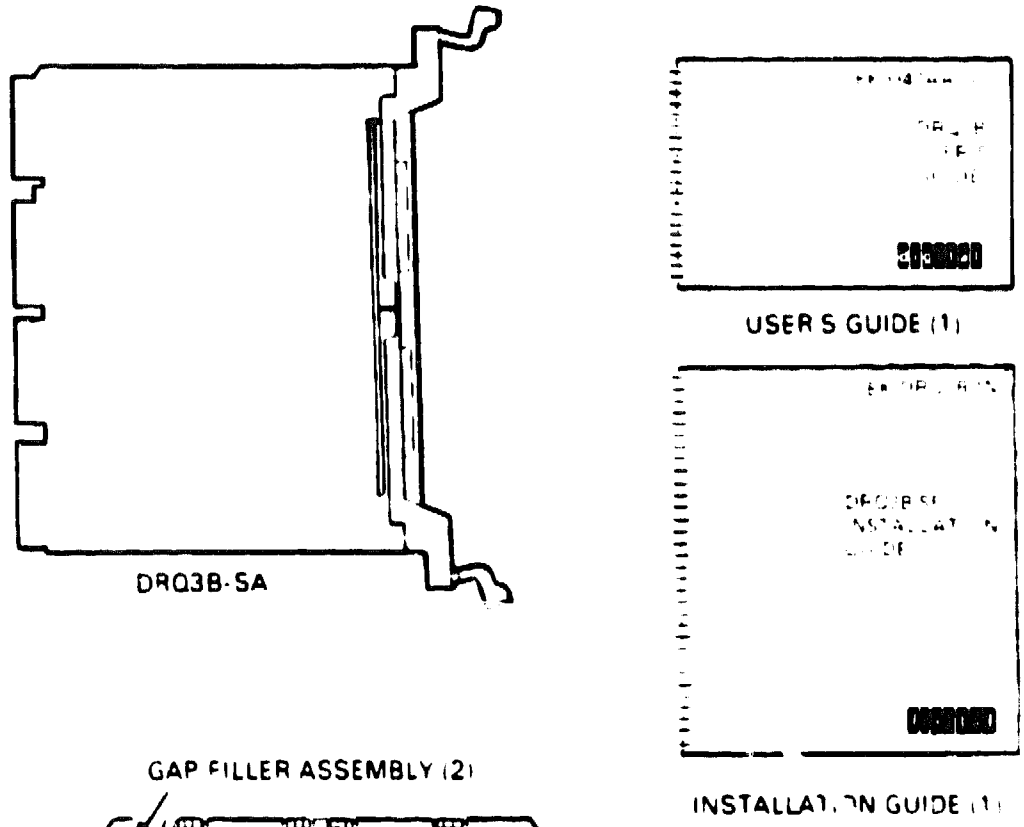
As you unpack the sh.pment, check the contents as follows. If any item is missing or damaged, contact the customer's sales representative, or delivery agent.

1. Look for external damage on the shipping container, such as dents, holes, or crushed corners.
2. Do not dispose of the packing material until you have installed the module and tested the system successfully.
3. Put on your anti-static wrist strap. Attach the alligator clip to the metal chassis of the BA200 series enclosure. Place the anti-static mat on your work surface.
4. Use the following checklist to identify the contents of the DRV1J-SF option kit (Figure 2–1).
   - One DRV1J-SA module (M8049-PA).
   - One gap filler kit consisting of two gap fillers assemblies (70-24505-01).
   - One DRV1J user's guide (EK-DRV1J-UG).

- One BA200-series enclosure installation guide (EK-DRV1J-IN).

5. Remove the DRV1J module from the anti-static bag.
6. Inspect the module for shipping damage. Carefully check for cracks, breaks, and loose components.
7. Report any damage to the shipper and notify the Digital representative.

Figure 2–1: DRV1J-SF Option Kit Contents

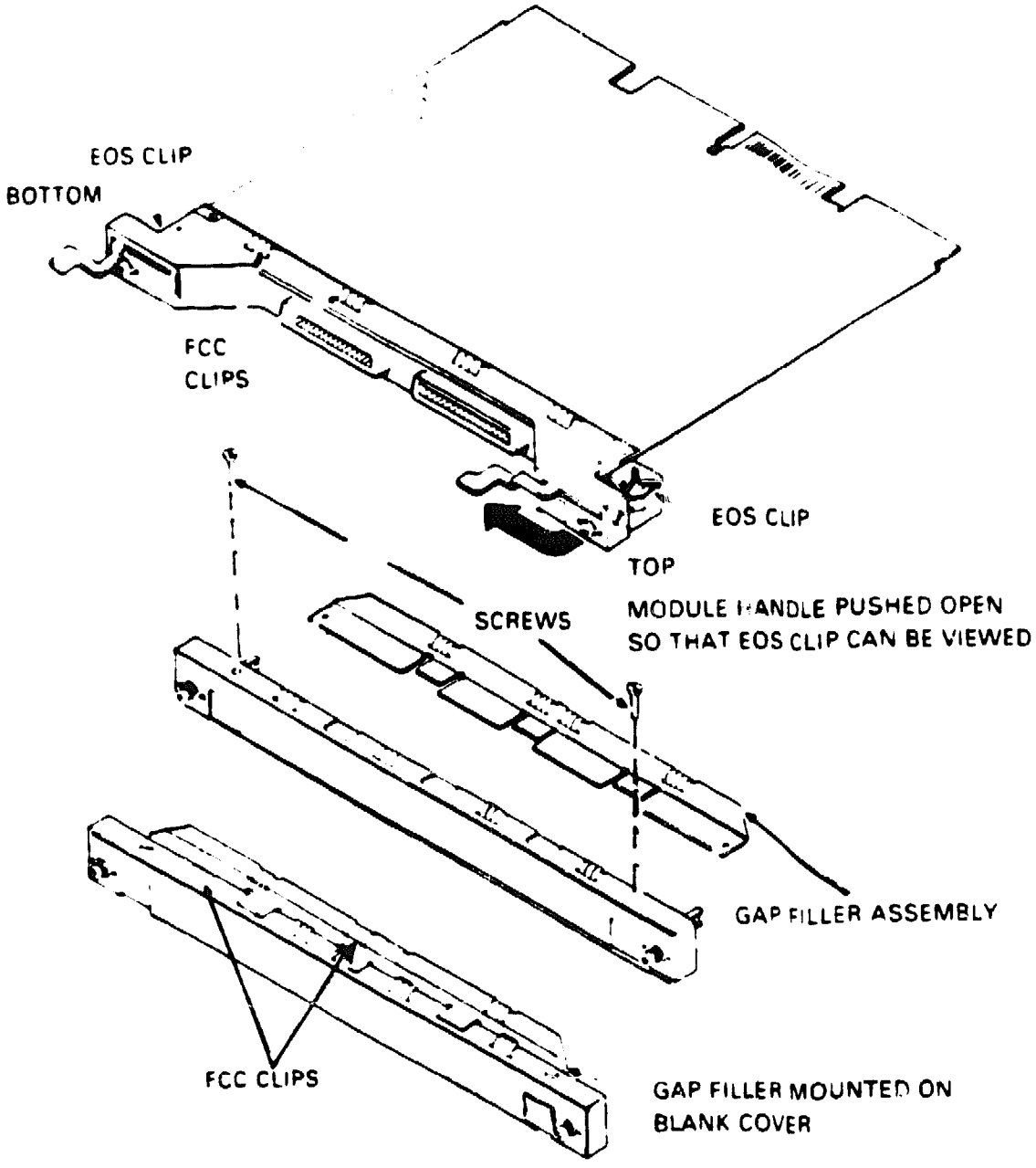


2.2 Inspecting the EMI and EOS Clips

To comply with regulations on electromagnetic interference (EMI), the bulkhead handles, blank covers, and gap fillers have transient protection EMI and electrical overstress (EOS) clips. These clips are grounded through the module handle.

1. Ensure that there is no residue or corrosion on the EMI clips and EOS clips on the DRV1J handle (Figure 2–2). Also ensure that there is no residue or corrosion on the EMI clips on the two gap fillers (Figure 2–2). If so, remove the corrosion with alcohol.
2. Ensure that the EMI and EOS clips are in an arched shape. When depressed slightly, they should return to their original shape.
3. If any clip is missing or broken, replace it with EMI clip P/N 12-26340-01 or EOS clip P/N 12-26922-01.

Figure 2–2: EMI and EOS Clips



2.3 Software Backup

It is the customer's responsibility to perform a software backup.

Make sure the customer has performed a software backup before you continue.

2.4 Testing the Existing System

You need to gain access to the tape drive to test the existing system. Refer to the system's documentation for procedures to access the tape drive and the system controls.

Test the existing system as follows.

1. Insert the diagnostic tape cartridge into the tape drive. Use MDM for a MicroVAX system or XXDP+ for MicroPDP-11 systems.
2. Test the existing system to make sure it is running properly. See Chapter 3 for further information on testing and troubleshooting.

Caution

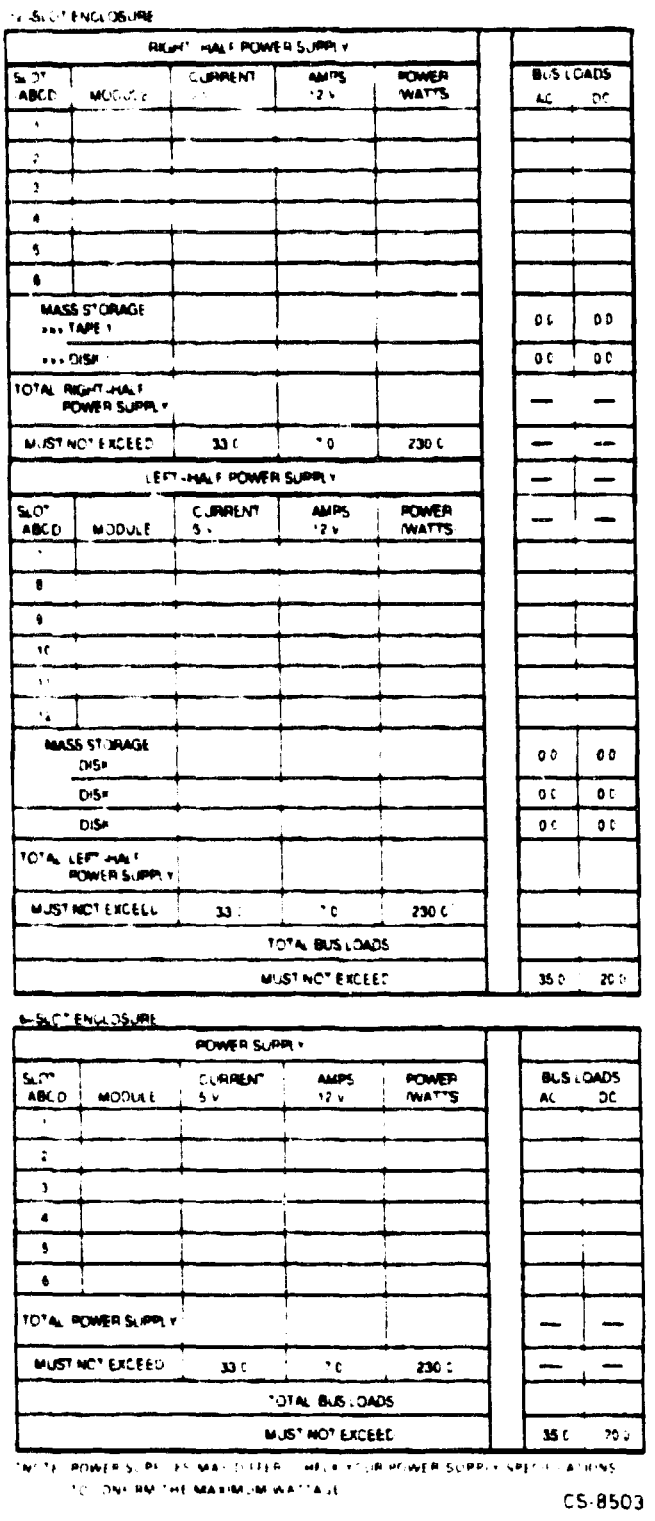
Always remove the tape cartridge before turning power off. Never work inside a system enclosure without first shutting off the system power.

3. After the successful completion of the test, remove the tape cartridge and turn the I/O power switch off (O). Unplug the ac power cord from the wall outlet.

2.5 Checking the System Configuration

You must complete a BA200-series enclosure worksheet (Figure 2–3) to make sure you do not exceed the system's limits for power and bus loads.

Figure 2–3: BA200-Series Configuration Worksheets



RIGHT HALF POWER SUPPLY						
SLOT ABCD	MODULE	CURRENT 5 V	AMPS 12 V	POWER WATTS	BUS LOADS AC	BUS LOADS DC
1						
2						
3						
4						
5						
6						
MASS STORAGE ... TAPE					0.0	0.0
... DISK					0.0	0.0
TOTAL RIGHT-HALF POWER SUPPLY					—	—
MUST NOT EXCEED		33.0	7.0	230.0	—	—
LEFT-HALF POWER SUPPLY					—	—
SLOT ABCD	MODULE	CURRENT 5 V	AMPS 12 V	POWER WATTS	—	—
7						
8						
9						
10						
11						
12						
MASS STORAGE DISK					0.0	0.0
DISK					0.0	0.0
DISK					0.0	0.0
TOTAL LEFT-HALF POWER SUPPLY						
MUST NOT EXCEED		33.0	7.0	230.0		
TOTAL BUS LOADS						
MUST NOT EXCEED					35.0	20.0

POWER SUPPLY						
SLOT ABCD	MODULE	CURRENT 5 V	AMPS 12 V	POWER WATTS	BUS LOADS AC	BUS LOADS DC
1						
2						
3						
4						
5						
6						
TOTAL POWER SUPPLY					—	—
MUST NOT EXCEED		33.0	7.0	230.0	—	—
TOTAL BUS LOADS						
MUST NOT EXCEED					35.0	20.0

CS-8503

You need to gain access to the modules installed in the system backplane before you configure the system. Refer to the system's documentation for procedures to help you remove any existing covers and gain access to the modules. To check the system configuration, perform the following steps.

1. On the configuration worksheet, list all the devices already installed in the system. Each module has an identifying label on the cover or handle.
2. List all the devices you plan to install in the system.
3. Fill in the information for each device, using the device information listed in Table 2–1.
4. Add up the columns. Make sure the totals are within the limits for the enclosure.

Table 2–1: Power and Bus Load Data

		Current (Amps) (Max)		Power (Max)	Bus Loads	
Option	**Module**	**+5 V**	**+12 V**	**Watts**	**AC**	**DC**
AAV11-SA	A1009-PA	1.8	0.0	9.0	2.1	0.5
ADV11-SA	A1008-PA	3.2	0.0	16.0	2.3	0.5
AXV11-SA	A026-PA	2.0	0.0	10.0	1.2	0.3
CXA16-M	M3118-YA	1.6	200 mA	10.4	3.0	0.5
CXB16-M	M3118-YB	2.0	0.0	10.0	3.0	0.5
CXY08-M	M3119-YA	1.8	300 mA	12.6	3.2	0.5
DELQA-SA	M7516-PA	2.7	0.5	19.5	2.2	0.5
DEQNA-SA	M7504	3.5	0.50	23.5	2.2	0.5
DFA01	M3121-PA	1.2	0.15	7.8	1.0	1.0
DPV11-SA	M8020-PA	1.2	0.30	9.6	1.0	1.0
DRQ3B-SA	M7658-PA	4.5	0.0	22.5	2.0	1.0
DRV1J-SA	M8049-PA	1.8	0.0	9.0	2.0	1.0
DRV1W-SA	M7651-PA	1.8	0.0	9.0	2.0	1.0

Table 2–1 (Cont.): Power and Bus Load Data

Option	Module	Current (Amps) (Max)		Power (Max)	Bus Loads	
		+5 V	+12 V	Watts	AC	DC
DZQ11-SA	M3106-PA	1.0	0.36	9.3	1.4	0.5
IBQ01-SA	M3125-PA	5.0	0.0	25.0	4.6	1.0
IEQ11-SA	M8634-PA	3.5	0.0	17.5	2.0	1.0
KA620-AA	M7478	6.2	0.14	32.7	2.7	1.0
KA630-AA	M7606	6.2	0.14	32.7	2.7	1.0
KA650-AA	M7620-A	6.4	0.14	33.6	2.7	1.0
KDA50-Q	M7164	6.93	0.0	34.65	3.0	0.5
KDA50-Q	M7165	6.57	0.03	33.21	–	–
KDJ11-BF	M8190	5.5	0.2	29.9	2.6	1.0
KLESI-SA	M7740-PA	3.0	0.0	15.0	2.3	1.0
KMV1A-SA	M7500-PA	2.6	0.2	15.4	3.0	1.0
KWV11-SA	M4002-PA	2.2	13 mA	11.156	1.0	0.3
LPV11-SA	M8086-PA	1.6	0.0	8.0	1.8	0.5
MRV11-D	M7942	1.6[1]	0.0	8.0[1]	3.0	0.5
M9060-YA		5.3	0.0	26.5	0.0	0.0
MS630-AA	M7607	1.0	0.0	5.0	–	–
MS630-BA	M7608	1.8	0.0	9.0	0.0	0.0
MS630-CA	M7609	3.1	0.0	15.5	0.0	0.0
MS650-AA	M7621-A	2.7	0.0	13.5	–	–
MSV11-JD	M8637-D	3.74	0.0	18.7	2.7	0.5
MSV11-JE	M8637-E	4.1	0.0	20.5	2.7	0.5
MSV11-QA	M7551-AA	2.4	0.0	12.0	2.0	1.0

[1]Value is for the unpopulated module only.

Table 2–1 (Cont.): Power and Bus Load Data

Option	Module	Current (Amps) (Max)		Power (Max)	Bus Loads	
		+5 V	+12 V	Watts	AC	DC
RA70		3.8	4.2	69.4	–	–
RD53A-EA		0.9	2.5	34.5	0.0	0.0
RD54A-EA		1.3	1.34	22.6	0.0	0.0
RQDX3-M	M7555	2.48	0.06	13.1	1.9	0.5
TK50E-EA		1.35	2.4	35.6	0.0	0.0
TK70E-EA		1.3	2.4	35.3	–	–
TQK50	M7546	2.9	0.0	14.5	2.8	0.5
TQK70-SA	M7559	3.5	0.0	17.5	4.3	.5
TSV05-SA	M7196	6.5	0.0	32.5	3.0	1.0

2.6 Finding CSR Addresses and Interrupt Vectors

When you add a DRV1J module to the backplane, you may need to reconfigure the modules already installed. Use the following procedures to find new CSR addresses and interrupt vectors for the modules, if necessary.

MicroPDP-11 Systems

To find CSR addresses and interrupt vectors for modules in a MicroPDP-11 system, see the *MicroPDP-11 Systems Maintenance Guide*.

MicroVAX System

For modules in a MicroVAX system, you can (1) manually calculate CSR addresses and interrupt vectors, or (2) use the CONFIG program. To manually calculate values, see the *MicroVAX Systems Maintenance Guide*.

The CONFIG program is in the MicroVMS or VMS SYSGEN utility. When you type in a list of the devices in the system, CONFIG automatically provides CSR address and interrupt vector information. Table 2–2 lists the devices supported by this utility.

Table 2–2: Devices Supported by SYSGEN

Device	Enter at DEVICE> Prompt
AAV11-S,-D	AAV11D
ADV11-S,-D	ADV11D
AXV11-S,-C	AXV11C
CXA16	DHV11
CXY08	DHV11
DELQA	QNA
DEQNA	QNA
DPV11	DPV11
DRV1J-S	DRV11J
DRV1W	DR11W
DZQ11	DZ11
IEQ11	IEQ11
KWV11-S,-C	KWV11C
RQDX3	UDA
TQK50/TQK70	TU81
TSV05	TS11

To use the SYSGEN utility, follow these steps.

1. Plug the ac power cord into the wall outlet and turn the I/O power switch on (1).
2. Type the following command at the system command prompt.

```
MCR SYSGEN
```

3. Press Return. The utility responds with the prompt

```
SYSGEN>
```

4. At the prompt, type

```
CONFIGURE
```

5. Press Return. The utility responds with the prompt

```
DEVICE>
```

6. Enter the abbreviation for each system device Table 2–2. Include those devices already installed and those you intend to install.

   Enter one abbreviation per line, then press Return. The *DEVICE>* prompt prompts you for another entry. If you are installing more than one unit of a particular device, enter a comma and the number of devices after the abbreviation. For example, *DHV11,2* indicates two DHV11 modules.

7. After you have entered all devices, type Ctrl/Z. The program displays the following information for each device you entered.

   CSR address and vector
   the name assigned to the device by the operating system
   the operating system support status (yes or no)

   The program uses an asterisk (*) to indicate a floating address or vector. If there is more than one unit of a particular device, the first address refers to the first device to be installed.

8. To exit from the SYSGEN utility, type **EXIT** at the SYSGEN prompt and press Return.

2.7 Operating System Shutdown

It is the customer's responsibility to shut down the operating system software.

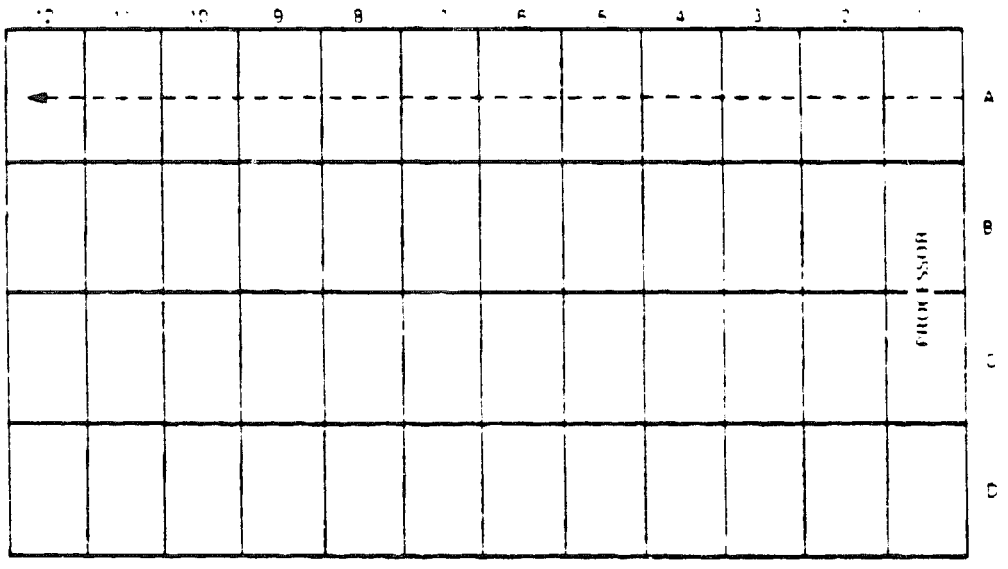
Make sure the customer shuts down the operating system software before you continue. Have the customer leave the system power on.

2.8 Guidelines for Module Placement

Bus Continuity

Bus grant signals pass through each installed module through the A connectors of each slot. Figure 2–4 shows the bus grant routing. Use bus grant continuity cards (M9047) in vacant backplane slots to ensure bus continuity.

Figure 2–4: Bus Grant Continuity Path



CS-8504

Power Supplies

The BA200-series enclosure contains one or two separate 230-watt power supplies.

- In 12-slot enclosures with one power supply, the power supply is located to the right of the backplane.
- In 12-slot enclosures with two power supplies, the power supply to the right of the backplane powers slots 1 through 6, and the power supply to the left of the backplane powers slots 7 through 12.
- In 6-slot enclosures, the power supply is located to the left of the backplane.

Each power supply in the enclosure must have a minimum 5-amp load on the 5-volt output to maintain regulation. If a power supply does not meet the minimum load requirement, you MUST install a load module (M9060-YA) in an open backplane slot that is powered by that power supply. Otherwise, the power supply enters an error mode and shuts down the system.

If a power supply meets the minimum load requirement, you should remove an existing load module.

Refer to Section 2.10, Relocating Existing Modules, for procedures on installing or removing modules.

Module Order

Use the recommended module order in Table 2–3 to help you correctly install the DRV1J in the BA200-series enclosure.

Table 2–3: Recommended Module Order

MicroVAX	MicroPDP-11/53	MicroPDP-11/83
KA620/KA630/KA650	KDJ11-SA/-SB	MSV11-JD/-JE
MS630-B/-C/MS650-A	MSV11-QA	KDJ11-BF
MRV11	MRV11	MRV11
AAV11	AAV11	AAV11

Table 2–3 (Cont.): Recommended Module Order

MicroVAX	MicroPDP-11/53	MicroPDP-11/83
ADV11	ADV11	ADV11
TSV05	TSV05	TSV05
KWV11	KWV11	KWV11
AXV11	AXV11	AXV11
DEQNA/DELQA	DEQNA/DELQA	DEQNA/DELQA
DPV11	DPV11	DPV11
DFA01	DFA01	DFA01
DZQ11	DZQ11	DZQ11
CXA16	CXA16	CXA16
CXB16	CXB16	CXB16
CXY08	CXY08	CXY08
LPV11	LPV11	LPV11
KDA50	KDA50	KDA50
KLESI	KLESI	KLESI
IEQ11	IEQ11	IEQ11
DRV1J	DRV1J	DRV1J
DRQ3B	DRQ3B	DRQ3B
DRV1W	DRV1W	DRV1W
IBQ01	TQK50/TQK70	TQK50/TQK70
TQK50/TQK70	RQDX3	RQDX3
RQDX3		

2.9 Configuring the DRV1J

There are two configuration tasks associated with installing the DRV1J in the Q-bus system. These are:

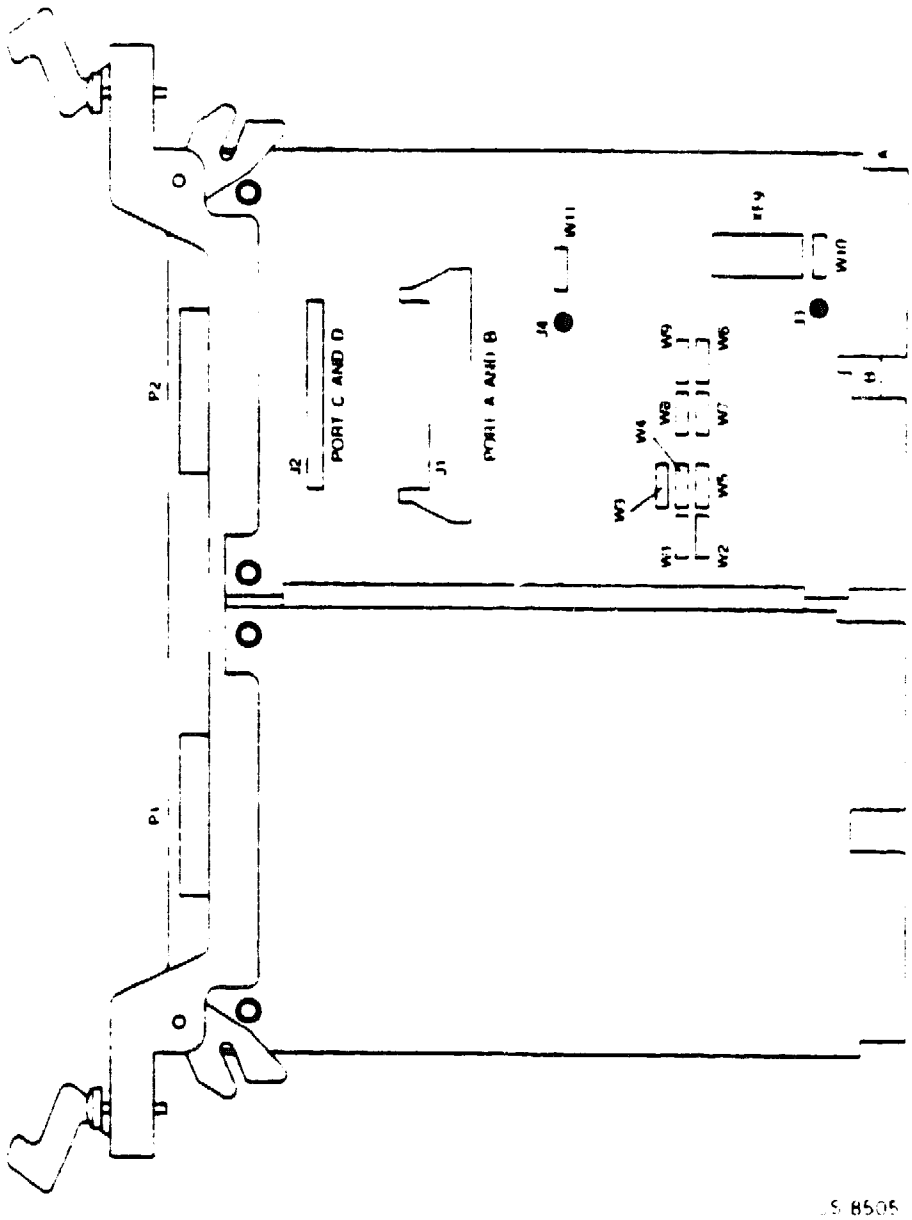
- Base address
- Vector address location.

2.9.1 Base Address

You set the module's base address using jumpers W1 through W9. The factory configuration address for the DRV1J is 17760100_8. If the system has more than one DRV1J installed, the second base address is 17760140_8. If the system has a third DRV1J installed, the third base address is 17760120_8.

If more than three DRV1J-S modules are installed in a system, the fourth and subsequent modules have floating addresses that should be assigned by SYSGEN.

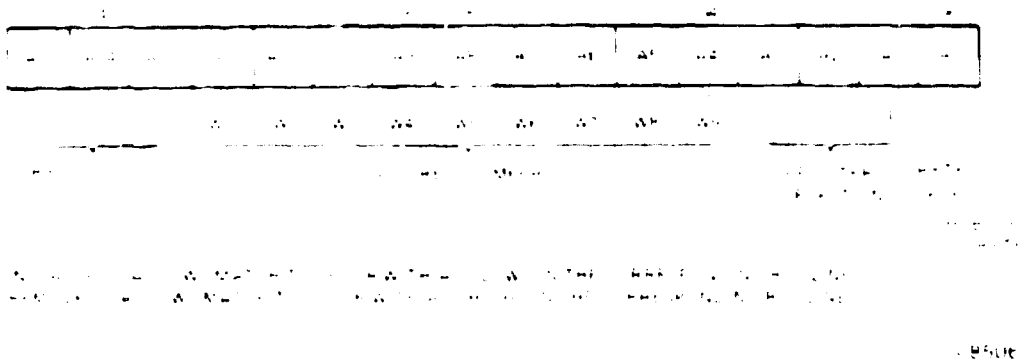
Figure 2–5: DRV1J-SA Module Layout



If it is necessary to change the factory configured base address, set the base address using jumpers W1 through W9.

Figure 2–6 shows the correspondence between bits in the base address and the jumpers. Installing a jumper sets a logical 1 in the corresponding address bit. Removing a jumper places a 0 in the corresponding address bit.

Figure 2–6: Correspondence of Address Bits and Jumpers



2.9.2 Vector Address

The vector address of the DRV1J is not set on the board. Instead it is written to RAM memory on the board and asserted on bits in port A. Jumper W11 controls on what bits the vector address is expressed. If jumper W11 is installed (this is the factory configuration) the vector address is asserted on port A bits 8 through 15 with the USER RPLY A through D bits disabled. If jumper W11 is removed, the vector address is asserted on port A bits 8 through 11 and the USER RPLY A through D bits. Refer to the *DRV11-J Parallel Line Interface User's Guide* for details.

2.10 Relocating Existing Modules

Caution

Only qualified service personnel should remove or install modules.

If the slot into which you plan to install the DRV1J does not contain an existing module, proceed to Section 2.11.

If the slot into which you plan to install the DRV1J contains an existing module, use the following procedures to relocate the existing modules in the backplane.

2.10.1 Modules with Handles

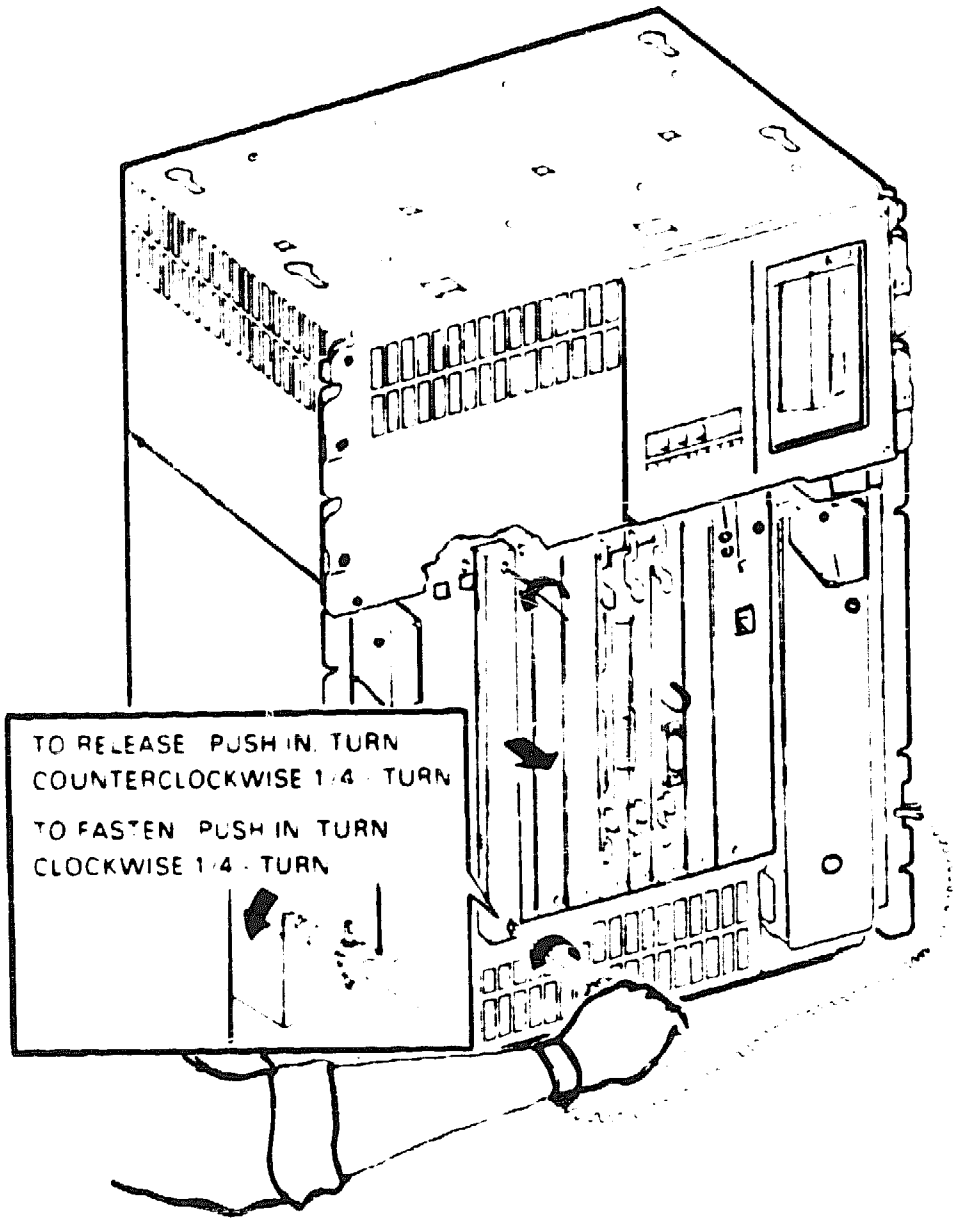
Use the following procedure to remove and install modules with handles.

Caution

Make sure you are wearing a grounded anti-static wrist strap when you remove or install modules.

1. Note the orientation of external cables connected to the module. **Carefully** label and then disconnect the cables.
2. Release the two ¼-turn captive screws that hold the module's handle to the card cage (Figure 2–7).

Figure 2–7: Releasing the Captive Screws



NOTE

THIS ILLUSTRATION SHOWS HOW TO RELEASE CAPTIVE SCREWS ON ALL BLANK COVERS AND BULKHEAD HANDLES

3. Simultaneously unlock the release levers by pulling up on the top lever and pulling down on the bottom lever (Figure 2–8).
4. Pull out on the module's handle and remove the module from the card cage
5. Confirm the module's CSR address and interrupt vector; see the *MicroVAX System Maintenance Guide*, or the *MicroPDP-11 Systems Maintenance Guide*, for help in determining the correct setting. Change jumpers or switch settings if necessary. If no change is necessary, be careful not to disturb any switchpacks on the module.
6. Reverse this procedure to install the module in its new location. Do not fasten the ¼-turn screws.

2.10.2 Modules with Blank Covers

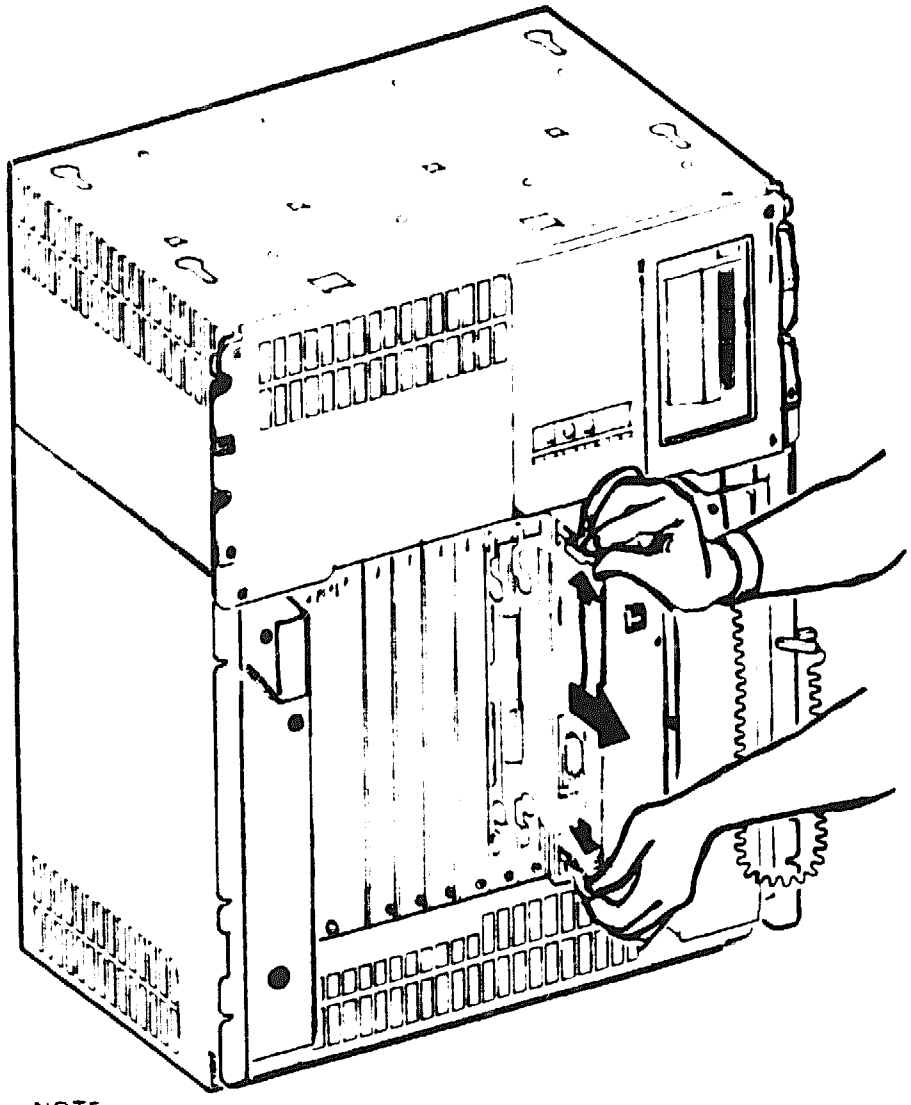
Use the following procedure to remove and install modules with blank covers.

Caution

Make sure you are wearing a grounded anti-static wrist strap when you remove or install modules.

1. Release the two ¼-turn captive screws that hold the blank cover to the card cage (Figure 2–7).
2. Pull the blank cover away from the card cage.
3. Note the orientation of any internal cables connected to the module. Some connectors are not keyed. Carefully label and disconnect the internal cables.
4. Unlock the module release levers by simultaneously pulling up on the top lever and pulling down on the bottom lever. For a module with a plastic handle, pull out on the plastic handle.
5. Carefully pull the module out of the card cage.
6. Confirm the module's CSR address and interrupt vector; see the *MicroVAX System Maintenance Guide*, or the *MicroPDP-11 Systems Maintenance Guide*, for help in determining the correct setting. Change jumpers or switch settings if necessary. If no change is necessary, be careful not to disturb any switch packs on the module.
7. Reverse this procedure to install the module in its new location. Do not fasten the ¼-turn screws.

Figure 2–8: Unlocking the Release Levers



NOTE
THIS ILLUSTRATION SHOWS HOW TO
UNLOCK RELEASE LEVERS ON ALL
MODULES WITH ATTACHED HANDLES

CS 8508

2.11 Installing the DRV1J-SA

Caution

Be careful not to snag the module's components on the card guides or adjacent modules.

1. Insert the DRV1J module into the appropriate card slot using the recommended module order listed in Section 2.8. Holding both the top and bottom release levers, lock the module in place by simultaneously pushing the top lever down and pulling the bottom lever up (Figure 2–9).
2. Do not fasten the ¼-turn captive screws.

2.11.1 Verifying the Ground Connections

When you install a module with a blank cover or flush handle next to a recessed-handle module, you MUST install a gap filler assembly between the modules to meet regulations for EMI. Without the gap filler, circuitry on the recessed-handle module is exposed.

Two gap filler assemblies (P/N 70-24505-01) are provided with the option kit. Each gap filler assembly includes one gap filler and two screws. You may need to install one, both, or none of these assemblies.

Verify that the ground connections are correctly in place as follows.

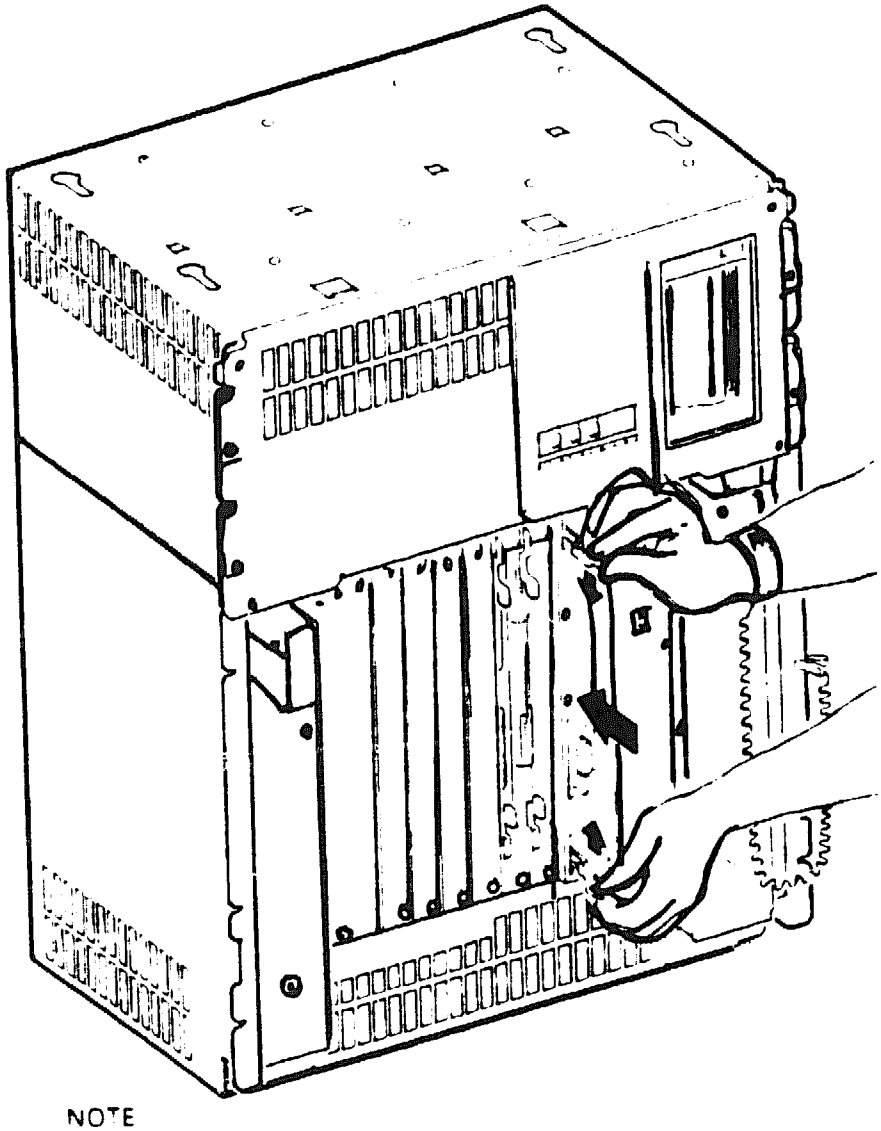
1. Check to see if any recessed-handle module in the backplane has a module with a blank cover or a flush handle in the slot immediately before or after it.
2. If so, verify that a gap filler assembly is installed on the side of the blank cover or flush handle that is next to the recessed-handle module (Figure 2–10).

Note

There should not be any open spaces between the modules in the backplane.

3. If no open spaces exist, the filler kit is not needed. Fasten the ¼-turn captive screws on all handles and covers in the backplane.

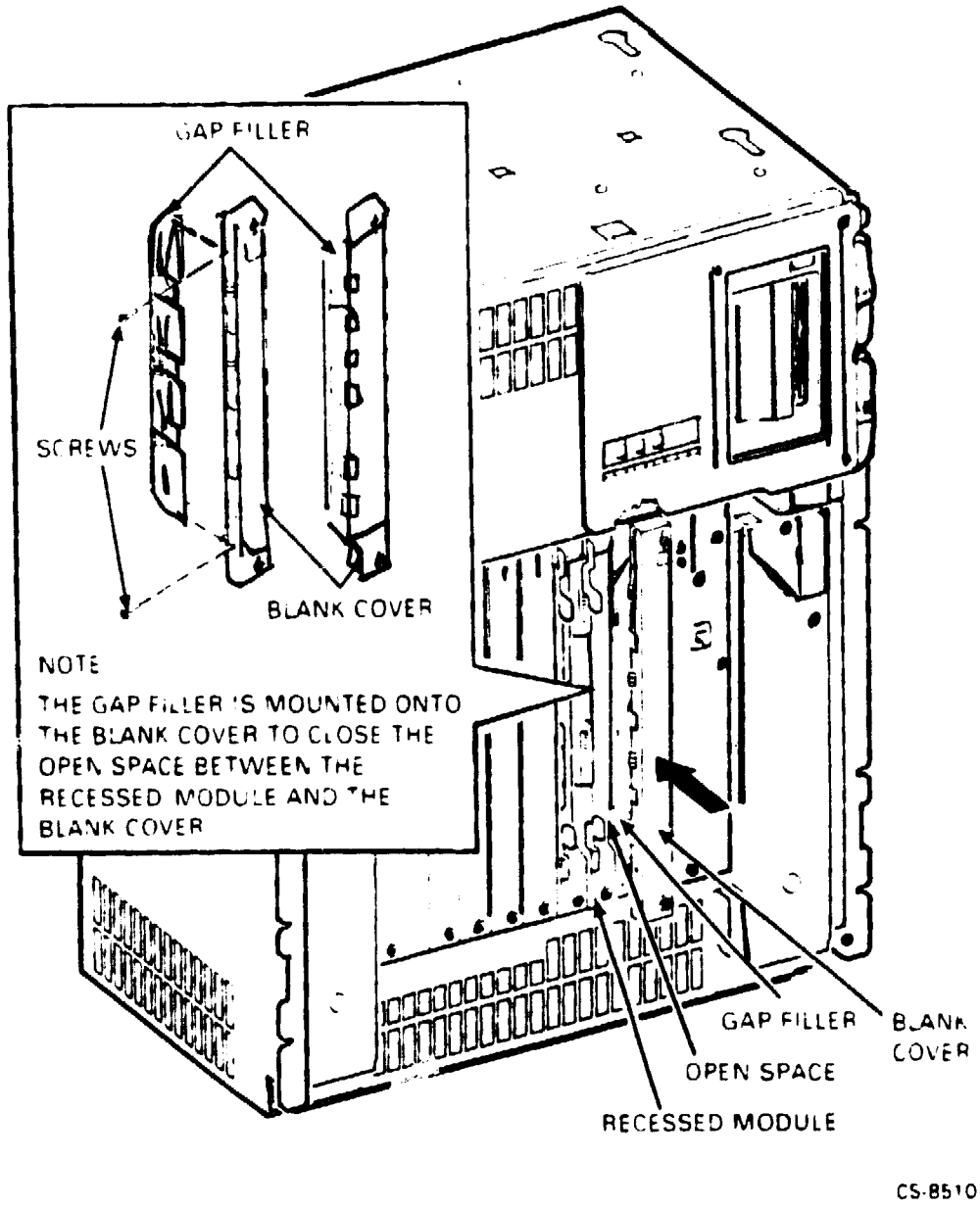
Figure 2–9: Inserting the Module



NOTE
THIS ILLUSTRATION SHOWS HOW TO LOCK
RELEASE LEVERS AND INSERT ALL MODULES
WITH ATTACHED HANDLES

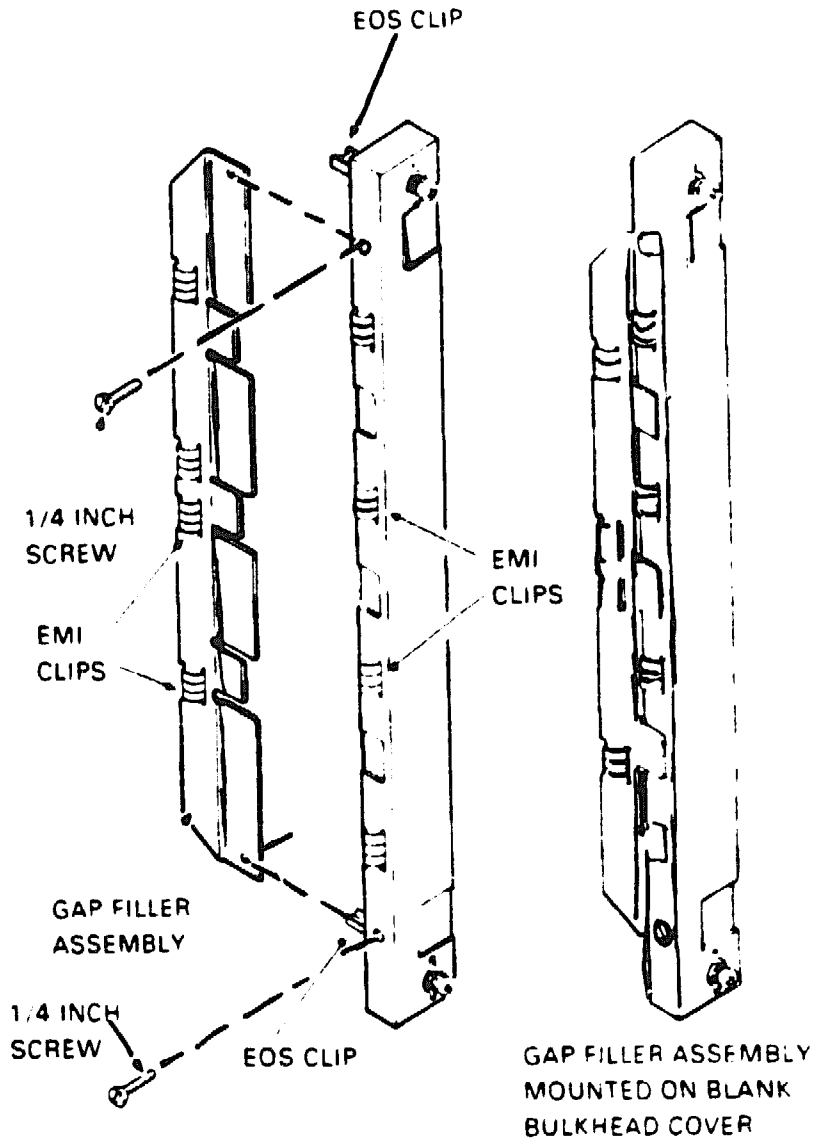
CS-8509

Figure 2–10: Ground Connections

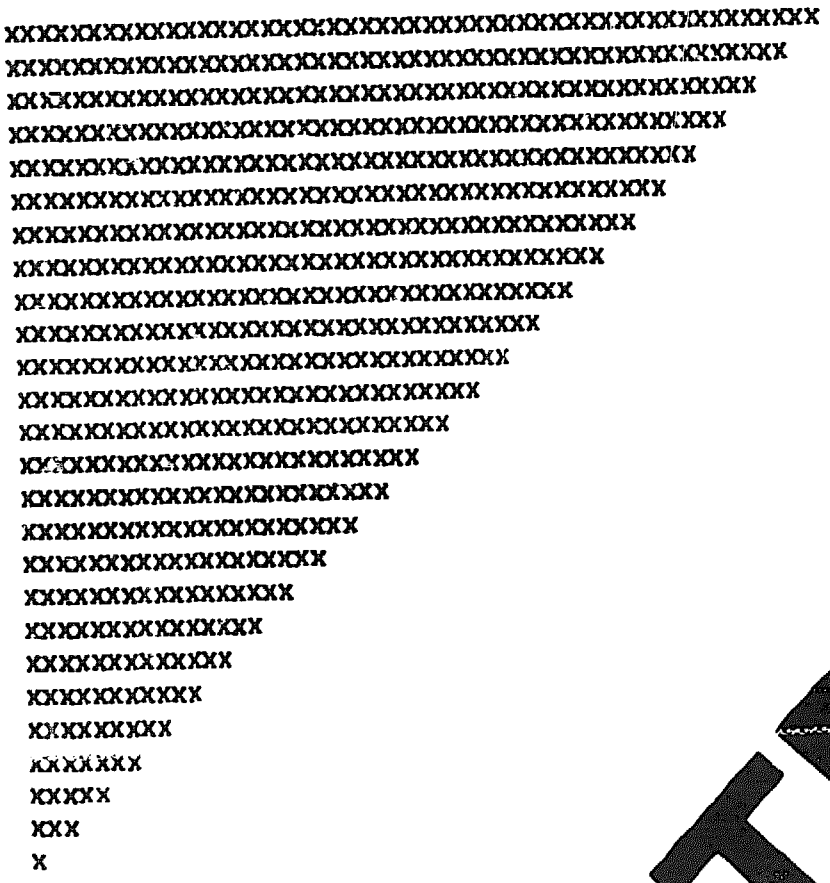


4. If an open space exists, install the gap filler assembly as follows.
   - Using two screws and one gap filler (P/N 70-24505-01), attach the gap filler to the top and bottom of the side of the blank cover or flush handle that fits next to the recessed-handle module. Make sure the gap filler tabs fit into the tab indentations on the blank cover or flush handle (Figure 2–11).
   - Place the blank cover with the gap filler over the card cage slot, or insert the flush handle module with the gap filler into the card slot.
   - Ensure that there is correct ground (no open spaces) between the two modules.
   - Fasten the ¼-turn captive screws on all handles and covers in the backplane.

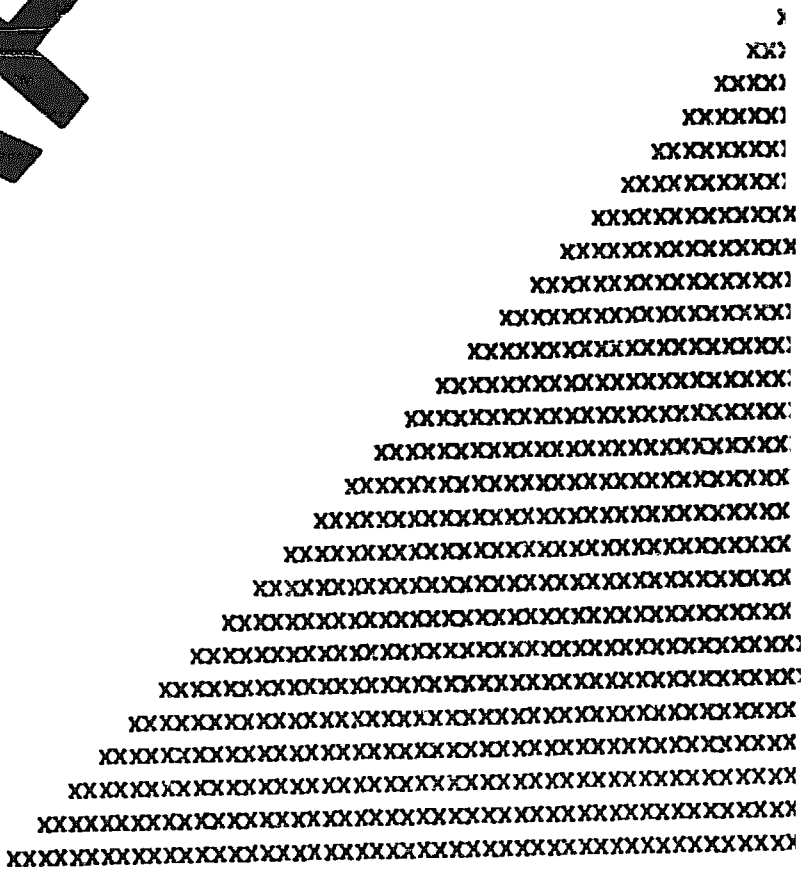
Figure 2–11: Attaching the Gap Filler Assembly



CS 85··



CHAPTER 3



Chapter 3

Testing the New Configuration

This chapter outlines the tests and procedures you should use to complete the installation.

3.1 Testing a MicroVAX System

Use the MicroVAX diagnostic monitor (MDM) to test a MicroVAX system. For the BA214 enclosure, use the Ethernet Server Kit (P/N ZNA07-CM, -CP, or -C5). The MDM software provides the following five groups of menu-driven tests

- Verify-mode functional tests — user or field service
- Verify-mode exerciser tests — user or field service
- Service-mode functional tests — field service
- Service-mode exerciser tests — field service
- Utility tests — field service

1. Boot the MDM media.
2. Type **<2>** at the main menu to allow the diagnostics to identify the new module.

Note

Look at the list of devices displayed, and make sure the new module is included. If it is not included,

repeat the installation sequence and make sure the module switches have been set correctly.

3. Run the service-mode functional tests for each module.
4. Run the service-mode exerciser tests. These tests require the loopback cable, 17-02374-01. Table 3–1 lists the signals in the loopback cable. For further information on how to run the tests, please refer to the *MDM User's Guide*.

These tests should complete without error. If an error occurs, consult the *MicroVAX System Maintenance Guide* for troubleshooting procedures.

3.2 Testing a MicroPDP-11 System

Use XXDP+ to test a MicroPDP-11 system.

Note

XXDP+ diagnostic support is not available for the MicroPDP-11 system in the 6-slot BA214 enclosure.

1. Boot the MicroPDP-11 customer diagnostic media.
2. Type **<I>** at the main menu to allow the diagnostics to identify the new module and add it to the configuration file.

Note

Look at the list of devices displayed, and make sure the new module is included. If it is not included, repeat the installation sequence and make sure the module switches have been set correctly.

3. Type **<T>** at the main menu to run the system tests.

The MicroPDP-11 Maintenance Kit (ZYABX-GZ, C5) allows you to run individual diagnostic programs under the XXDP+ diagnostic monitor, and to configure and run DECX/11 system test programs.

The DECX/11 checks to see if the system is functioning correctly. The exerciser is made up of different modules, one for each option present, and is unique to the system being tested. If you remove or install options, the exerciser must be reconfigured. Do not run DECX/11 until all individual device diagnostics have run without error.

The tests should complete without error. If an error occurs, see the *MicroPDP-11 Systems Maintenance Guide* for troubleshooting procedures or further instructions on how to run XXDP+.

3.3 Connecting External Devices

1. After the testing has been successfully completed, remove the tape cartridge and turn the I/O power switch off (0). Unplug the ac power cord from the wall outlet.
2. **Carefully** reconnect any external devices you removed from existing modules.
3. Use the BS04M-15 cable assembly to interface the DRV1J to external devices. Please see Table 3–2 and Table 3–3 for the DRV1J-SA/SF pin signal outputs. See Figure 3–1 for location of pins.
4. Use the cable adapter 12-31358-01 for applications that require the interface of the DRV1J-SA/SF to a 50 pin (2x25) ribbon cable. The cable adapter has a subminiature D-connector on one side and a 50-pin rectangular connector on the other side.

Note

1. Please see Table 3–2 and Table 3–3 for the correct signal pinouts on the adapter. For the pin signals on the 50-pin ribbon connector side of the adapter, refer to the pin numbers listed under the J1 and J2 columns. For the pin signals on the D-connector side of the adapter, refer to the pin numbers listed under the P1 and P2 columns.
2. Use shielded ribbon cables for the interface to the 12-31358-01 cable adapter for FCC compliance purposes.

See the *DRV11-J Parallel Line Interface User's Guide* for further information on interfacing with the DRV1J.

5. Replace any existing covers you may have removed to gain access to the modules.
6. Have the customer bring up the operating system software. The installation procedure is now complete.

Table 3–1: DRV1J-SA/SF Loopback Signal Connections

Port	J1 Pin	P1 Pin	Signal	Port	J2 Pin	P2 Pin	Signal
B	01	50	BI/O9	D	50	01	DI/O9
B	02	17	BI/O12	D	49	34	DI/O12
B	03	33	BI/O11	D	48	18	DI/O11
B	04	49	BI/O8	D	47	02	DI/O8
B	05	16	BI/O14	D	46	35	DI/O14
B	06	32	BI/O15	D	45	19	DI/O15
B	07	48	BI/O10	D	44	03	DI/O10
B	08	15	BI/O13	D	43	36	DI/O13
B	09	31	BI/O5	D	42	20	DI/O5
B	[illegible]	47	BI/O7	D	41	04	DI/O7
B	11	14	BI/O3	D	40	37	DI/O3
B	12	30	BI/O1	D	39	21	DI/O1
B	13	46	BI/O2	D	38	05	DI/O2
B	14	13	BI/O0	D	37	38	DI/O0
B	15	29	BI/O6	D	36	22	DI/O6
B	16	45	BI/O4	D	35	06	DI/O4
B	18	28	USERRPLYB	D	33	23	DRV11JRPLYD
B	20	11	DRV11JRDYB	D	31	40	USERRDYD
B	22	43	USERRDYB	D	29	08	DRV11JRDYD
B	24	26	DRV11JRPLYB	D	27	25	USERRPLYD
A	27	25	USERRPLYA	C	24	26	DRV11JRPLYC
A	29	08	DRV11JRDYA	C	22	43	DRV11JRDYC
A	31	40	USERRDYA	C	20	11	DRV11JRDYC
A	33	23	DRV11JRPLYA	C	18	28	USERRPLYC

Table 3–1 (Cont.): DRV1J-SA/SF Loopback Signal Connections

Port	J1 Pin	P1 Pin	Signal	Port	J2 Pin	P2 Pin	Signal
A	35	06	AI/O4	C	16	45	CI/O4
A	36	22	AI/O6	C	15	29	CI/O6
A	37	38	AI/O0	C	14	13	CI/O0
A	38	05	AI/O2	C	13	46	CI/O2
A	39	21	AI/O1	C	12	30	CI/O1
A	40	37	AI/O3	C	11	14	CI/O3
A	41	04	AI/O7	C	10	47	CI/O7
A	42	20	AI/O5	C	09	31	CI/O5
A	43	36	AI/O13	C	08	15	CI/O13
A	44	03	AI/O10	C	07	48	CI/O10
A	45	19	AI/O15	C	06	32	CI/O15
A	46	35	AI/O14	C	05	16	CI/O15
A	47	02	AI/O8	C	04	49	CI/O8
A	48	18	AI/O11	C	03	33	CI/O11
A	49	34	AI/O12	C	02	17	CI/O12
A	50	01	AI/O9	C	01	50	CI/O9

Note

1. See Figure 2–5 for the location of J1, J2, P1, and P2.
2. Connector pins 17,19,21,23,25,26,28,30,32, and 34 on J1 and J2 are grounds.
3. See Figure 3–1 for the location of pins.

Table 3–2: DRV1J-SA/SF J1 and P1 Pin-Out

Port	J1 Pin	P1 Pin	Signal	Port	J1 Pin	P1 Pin	Signal
B	1	50	BI/O9	A	26	09	GROUND
B	2	17	BI/O12	A	27	25	USERRPLYA
B	3	33	BI/O11	A	28	41	GROUND
B	4	49	BI/O8	A	29	08	DRV11JRDYA
B	5	16	BI/O14	A	30	24	GROUND
B	6	32	BI/O15	A	31	40	USERRDYA
B	7	48	BI/O10	A	32	07	GROUND
B	8	15	BI/O13	A	33	23	DRV11JRPLYA
B	9	31	BI/O5	A	34	39	GROUND
B	10	47	BI/O7	A	35	06	AI/O4
B	11	14	BI/O3	A	36	22	AI/O6
B	12	30	BI/O1	A	37	38	AI/O0
B	13	46	BI/O2	A	38	05	AI/O2
B	14	13	BI/O0	A	39	21	AI/O1
B	15	29	BI/O6	A	40	37	AI/O3
B	16	45	BI/O4	A	41	04	AI/O7
B	17	12	GROUND	A	42	20	AI/O5
B	18	28	USERRPLYB	A	43	36	AI/O13
B	19	44	GROUND	A	44	03	AI/O10
B	20	11	DRV11JRDYB	A	45	19	AI/O15
B	21	27	GROUND	A	46	35	AI/O14

Table 3–2 (Cont.): DRV1J-SA/SF J1 and P1 Pin-Out

Port	J1 Pin	P1 Pin	Signal	Port	J1 Pin	P1 Pin	Signal
B	22	43	USERRDYB	02	A	47	AI/O8
B	23	10	GROUND	A	48	18	AI/O11
B	24	26	DRV11JRPLYB	A	49	34	AI/O12
B	25	42	GROUND	A	50	01	AI/O9

Note

1. See Figure 2–5 for the location of J1, J2, P1, and P2.
2. J1 is the 50-pin board header connector port A and B (on the module, as shown in Figure 2–5).
3. P1 is the 50-pin subminiature-D connector located on the bottom of the bulkhead handle, as shown in Figure 2–5.
4. See Figure 3–1 for the location of pins.

Table 3–3: DRV1J-SA/SF J2 and P2 Pin-Out

Port	J2 Pin	P2 Pin	Signal	Port	J2 Pin	P2 Pin	Signal
C	1	50	CI/O9	D	26	09	GROUND
C	2	17	CI/O12	D	27	25	USERRPLYD
C	3	33	CI/O11	D	28	41	GROUND
C	4	49	CI/O8	D	29	08	DRV11JRDYD
C	5	16	CI/O14	D	30	24	GROUND
C	6	32	CI/O15	D	31	40	USERRDYD
C	7	48	CI/O10	D	32	07	GROUND
C	8	15	CI/O13	D	33	23	DRV11JRPLYD
C	9	31	CI/O5	D	34	39	GROUND

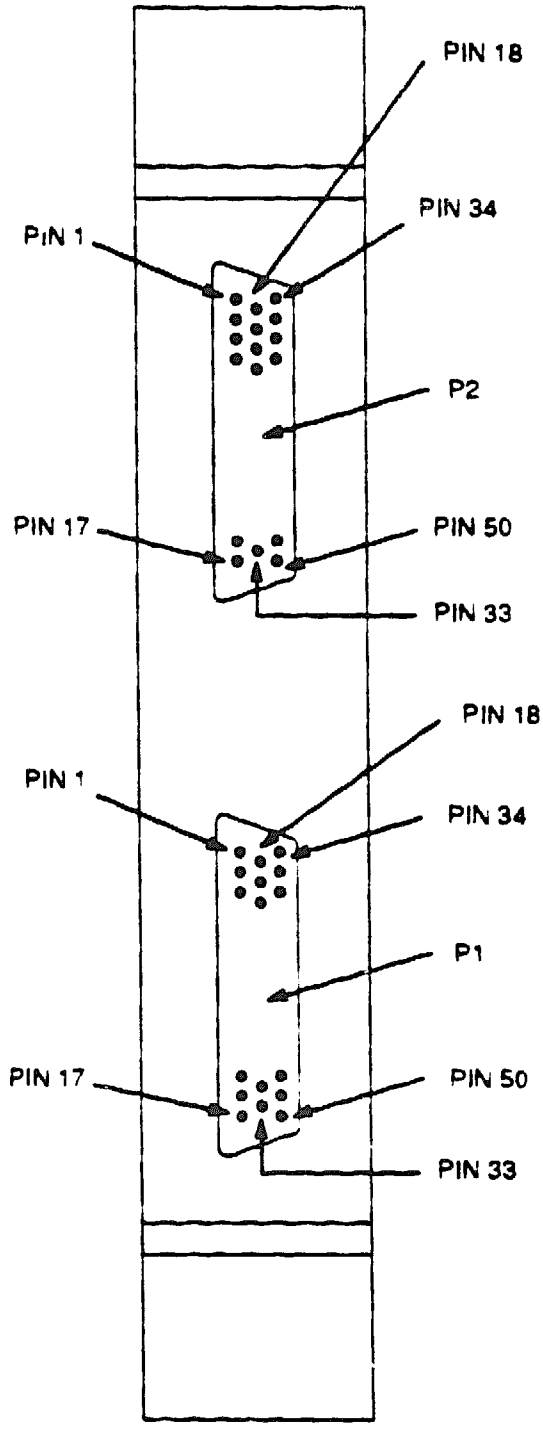
Table 3–3 (Cont.): DRV1J-SA/SF J2 and P2 Pin-Out

Port	J2 Pin	P2 Pin	Signal	Port	J2 Pin	P2 Pin	Signal
C	10	47	CI/O7	D	35	06	DI/O4
C	11	14	CI/O3	D	36	22	DI/O6
C	12	30	CI/O1	D	37	38	DI/O0
C	13	46	CI/O2	D	38	05	DI/O2
C	14	13	CI/O0	D	39	21	DI/O1
C	15	29	CI/O6	D	40	37	DI/O3
C	16	45	CI/O4	D	41	04	DI/O7
C	17	12	GROUND	D	42	20	DI/O5
C	18	28	USERRPLYC	D	43	36	DI/O13
C	19	44	GROUND	D	44	03	DI/O10
C	20	11	DRV1JRDYC	D	45	19	DI/O15
C	21	27	GROUND	D	46	35	DI/O14
C	22	43	USERRDYC	D	47	02	DI/O8
C	23	10	GROUND	D	48	18	DI/O11
C	24	26	DRV11JRPLYC	D	49	34	DI/O12
C	25	42	GROUND	D	50	01	DI/O9

Note

1. Refer to Figure 2–5 for the location of J1, J2, P1, and P2.
2. J2 is the 50-pin board header port C and D (on the module, as shown in Figure 2–5).
3. P2 is the 50-pin subminitature-D connector located on the top of the bulkhead handle, as shown in Figure 2–5.
4. See Figure 3–1 for the location of pins.

Figure 3–1: Pin Locations for P1 and P2



CS 85 2