
DZQ11-SF

DZQ11-SF 4-Line Asynchronous Multiplexer Option Installation Guide

Order No. EK-DZQ11-IN-001

digital equipment corporation
maynard, massachusetts

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Preface

Introduction

This installation guide provides information and procedures necessary to install the DZQ11-SF 4-line asynchronous multiplexer option kit in the BA200 microsystem enclosure.

Intended Audience

This guide is intended only for Digital Field Service personnel and 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

If you are not qualified to perform the installation of the DZQ11-SF multiplexer option kit, call Digital Field Service to schedule an installation.

If you are to perform the installation of the DZQ11-SF multiplexer option kit, make sure you are wearing an antistatic wrist strap connected to a grounded antistatic workstation before handling the modules. The system modules are susceptible to damage by static discharge. Also, ensure the bus grant continuity path is intact after the installation, with no vacant backplane slots between modules.

To install the DZQ11-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

Be sure to take antistatic precautions when installing the new module. Be sure to use the wrist strap and antistatic mat found in the Antistatic Kit (P/N 29-26246-00).[1]

Use the configuration worksheets in Chapter 2 to determine whether the installation of the option module exceeds the power requirements and bus load requirements for the system.

To install the DZQ11-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.

Associated Documents

The following sources contain further information about the DZQ11-SF 4-line asynchronous multiplexer option.

Title	Order Number
DZQ11 Asynchronous Multiplexer Technical Manual	EK-DZQ11-TM
DZQ11 Asynchronous Multiplexer User's Guide	EK-DZQ11-UG
MicroVAX Systems Maintenance Guide[1]	EK-001AA-MG
MicroPDP-11 Systems Maintenance Guide[2]	AZ-FI11A-MG

[1]This document is included in the MicroVAX system maintenance kit

[2]This document is included in the MicroPDP-11 systems maintenance kit

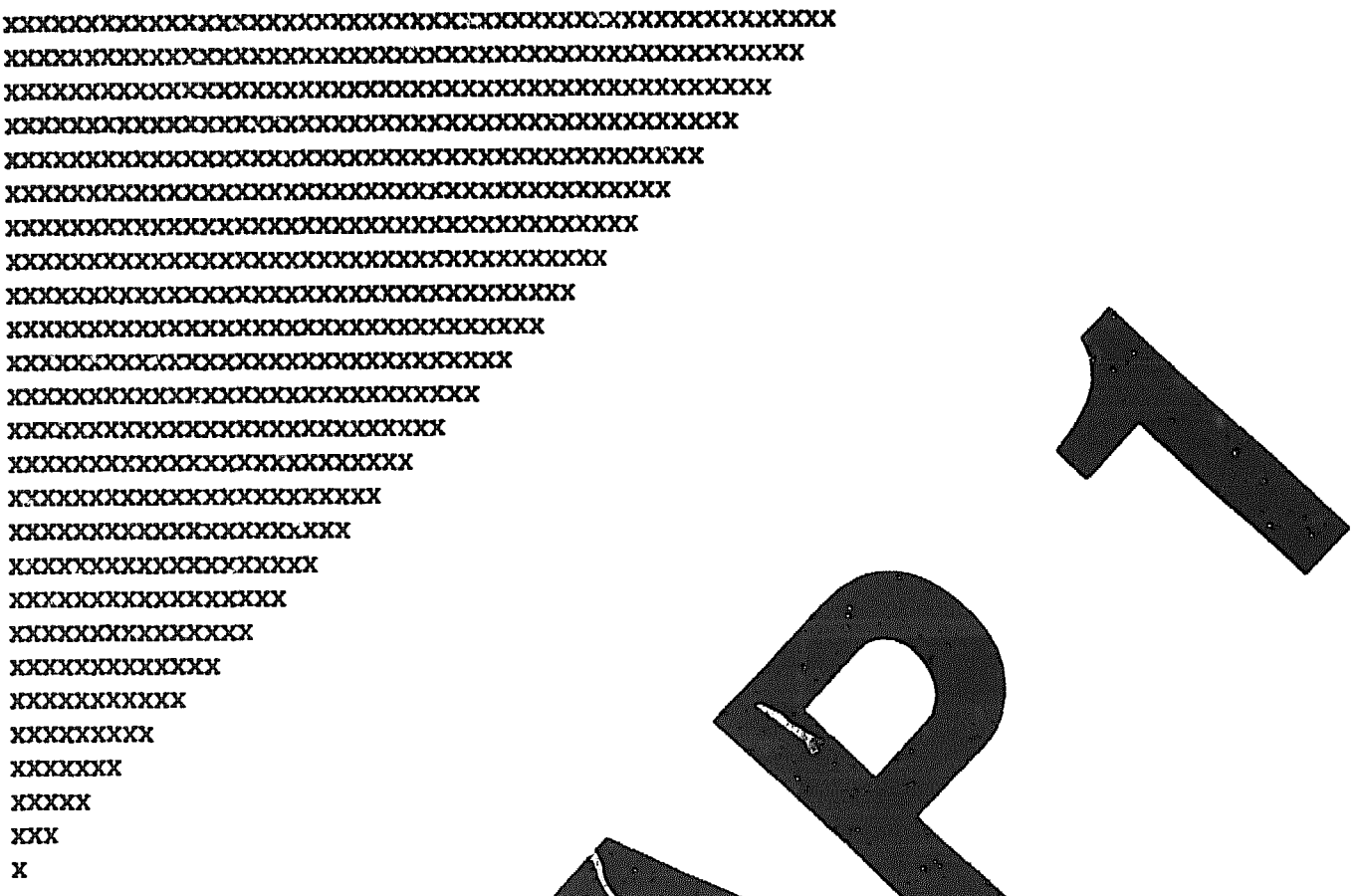
[1] The Antistatic Kit is not included in this installation kit. It is part of the Field Service tool kit.

Digital personnel may order documents from:

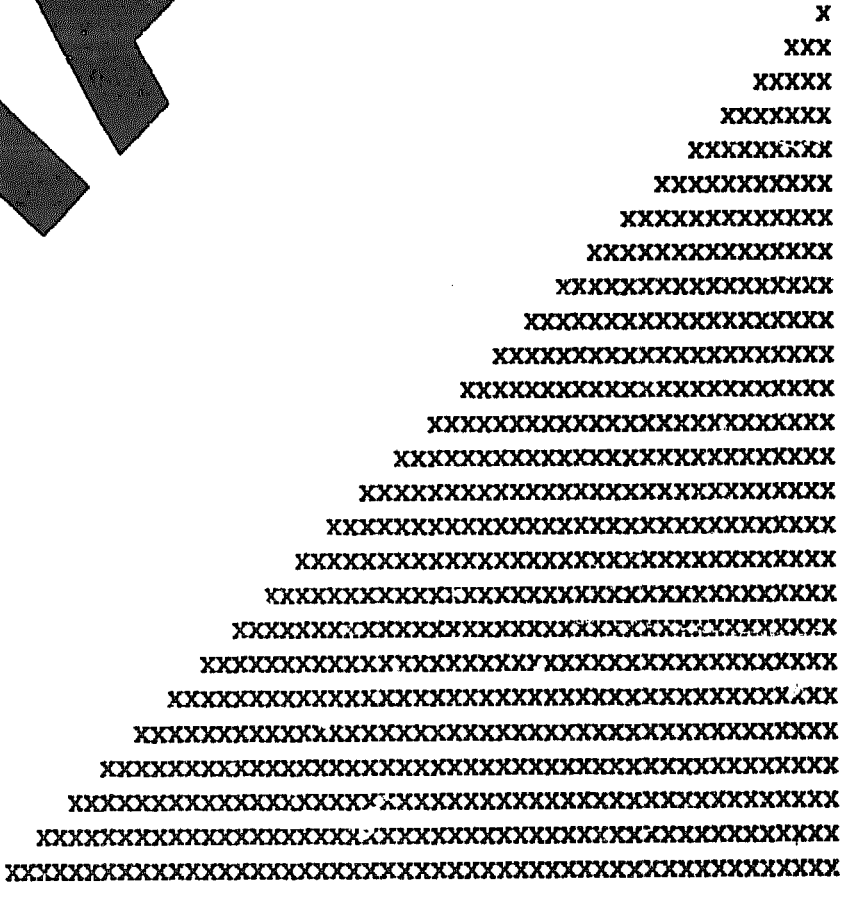
Digital Equipment Corporation
444 Whitney Street
Northboro, MA. 01532
Attn: Publishing and Circulation Services (NR03/W3), Order Processing Section

Customers may order documents from:

Digital Equipment Corportion
Peripherals and Supplies Group
P. O. Box CS2008
Nashua, NH 03061



CHAPTER 1



Chapter 1
Description

This chapter describes the DZQ11-SF option and the BA200-series system enclosure.

1.1 DZQ11-SF Asynchronous Multiplexer Option

The DZQ11-SF is an option for the BA200-series enclosure ONLY.

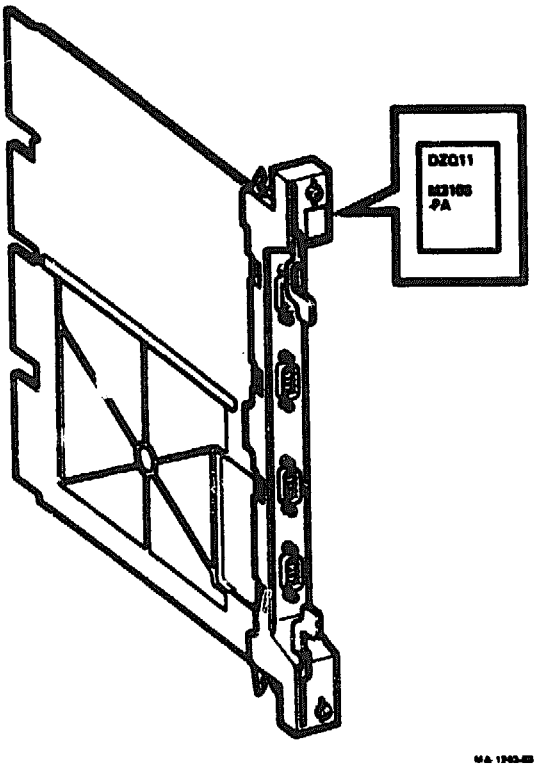
The DZQ11-SF asynchronous multiplexer option connects the Q22-bus to as many as four asynchronous serial data communication lines. It can be used in many applications, such as data concentration, real-time processing, and cluster controlling. The DZQ11-SF option module (hereafter refered to as DZQ11) is dual-height, with a BA200 style bulkhead handle (Figure 1-1). The module provides four full-duplex serial data channels. The DZQ11 conforms to the RS232-C (V.28) and RS423-A (V.10/X.26).

All four channels provide enough modem control to allow auto answer dial up operation with modems using full-duplex operations. You can use AT&T 103, 113, and 212 modems,[2] or the equivalent.

The DZQ11 is program-compatible with the Q-bus DZV11 and with the UNIBUS option DZ11-A. The only exception is the number of serial lines supported. The DZQ11 DOES NOT support 20 mA operation.

[2] The DZQ11 modem control DOES NOT support half-duplex operation of the secondary transmit-and-receive operation available on some modems (such as the Bell 202).

Figure 1–1: DZQ11-SA Module (M3106-PA) with Bulkhead Handle



You can program each channel separately, selecting one of sixteen baud rates. Speed tolerance for all rates is better than 0.3%. The 16 possible baud rates are listed below.

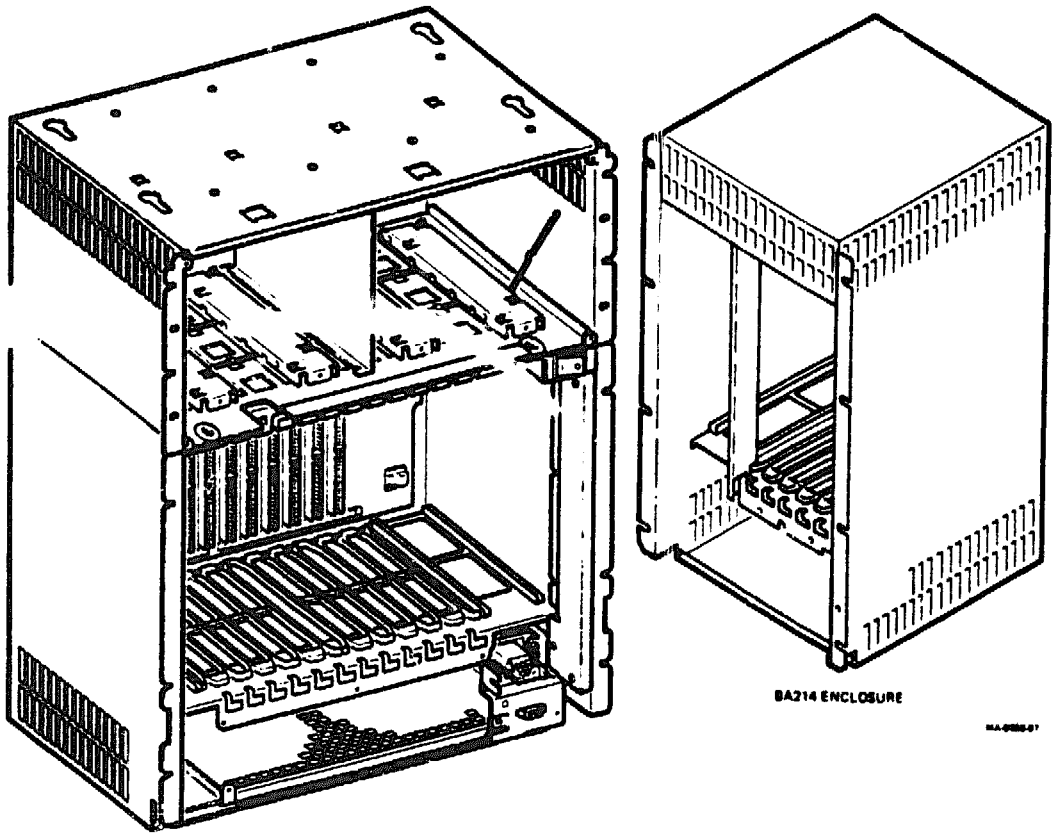
Baud Rates			
50	150	1800	4800
75	300	2000	7200
110	600	2400	9600
134.5	1200	3600	19,800 (non standard)

See the *DZQ11 Asynchronous Multiplexer Technical Manual* (EK-DZQ11-TM) for further information.

1.2 BA200-Series System Enclosures

The BA200 enclosure has a 6- or 12-slot Q-bus backplane and one or two modular power supplies. Figure 1-2 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 in all 12 slots. MicroVAX systems use the CD rows of slots 1 through 3, and MicroPDP-11 systems use the CD rows of slots 1 through 4 for their high-speed memory interconnects.

Figure 1-2: BA200-Series Enclosures



BA200-series enclosures with mass storage area 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.

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 for external devices have bulkhead handles. These handles replace the insert panels and internal cabling found in the BA23 and BA123 enclosures.
- Standard Q22-bus modules (such as the RQDX3 and TQK50) have blank bulkhead covers.

The module handles and blank covers form an electrical seal that complies with FCC regulations 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 Systems Maintenance Guide* (EK-001AA-MG) for further information on the BA200-series (BA213) enclosure.


CHAP 2

Chapter 2
Installation

This chapter provides step-by-step procedures for unpacking, inspecting, and installing the DZQ11-SF option kit. Module and system configuration are also discussed in this chapter.

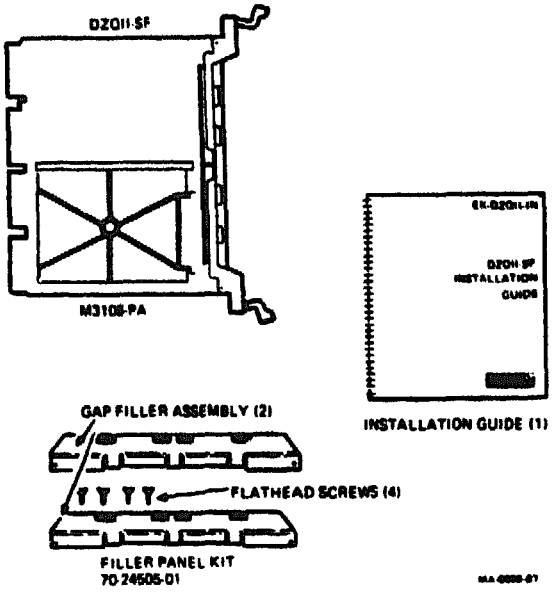
CAUTION: *ONLY qualified service personnel should remove or install modules.*

2.1 Unpacking the Option Kit

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 the module has been successfully installed and is operational.
3. Put on your antistatic wrist strap.
4. Attach the wrist strap and antistatic mat to the BA200-series enclosure metal chassis. Use the antistatic mat for placement of the module.
5. Use the checklist to identify the contents of the DZQ11-SF Option Kit (Figure 2-1).
   - One DZQ11-SA logic module (M3106-PA)
   - One filler panel kit (70-24505-01)[3]
   - One installation guide (EK-DZQ11-IN)

[3] The filler panel kit should include two gap filler assemblies, and four 1/4 inch flathead machine screws.

Figure 2–1: DZQ11-SF Option Kit Contents



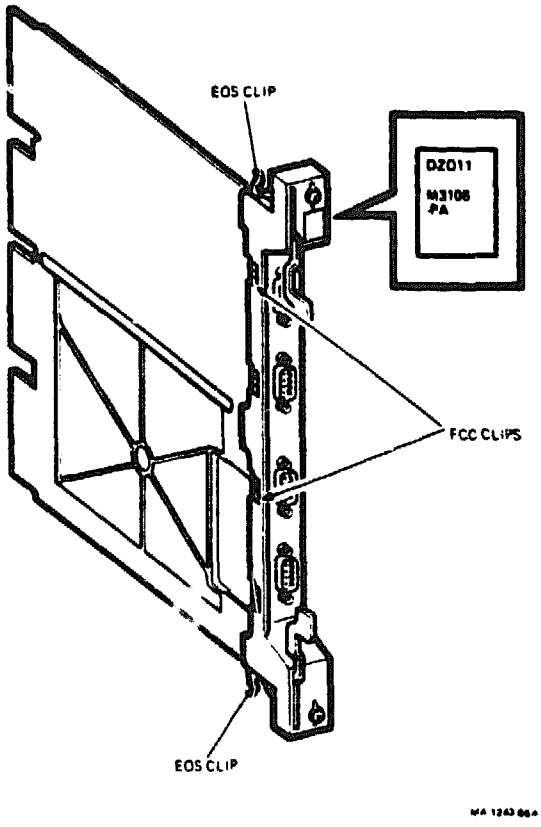
6. Remove the DZQ11 module from the antistatic bag.
7. Inspect the module for shipping damage.
8. Report any damage to the shipper and notify the Digital representative.

2.2 Inspecting The FCC and EOS Clips

NOTE: *To comply with FCC regulations, bulkhead handles are equipped with transient protection FCC and EOS clips; these clips provide ground through the module handle.*

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

Figure 2-2: FCC and EOS Clips



2.3 Software Backup

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

Digital Field Service should make sure that the customer has taken this step before starting to configure the system.

2.4 Configuration

The following sections contain information on configuring the system and the DZQ11-SF option.

2.4.1 Checking the System Configuration

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

Figure 2–3: BA200-Series Configuration Worksheet

12-SLOT ENCLOSURE

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 1					8.0	8.0
>>> DISK 1					8.0	8.0
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 2					8.0	8.0
>>> DISK 3					8.0	8.0
TOTAL LEFT-HALF POWER SUPPLY					—	—
MUST NOT EXCEED		33.0	7.0	230.0	—	—
TOTAL BUS LOADS >>>						
MUST NOT EXCEED >>>					35.0	20.0

6-SLOT ENCLOSURE

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

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 further information on how to gain access to the system modules.

To check the system configuration, perform the following steps.

1. On the configuration worksheet, list all the devices already installed in the system.
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	
Factory-installed Option	+5 V	+12 V	Watts	AC	DC
CXA16-M	1.6	200 mA	10.4	3.0	0.5
CXB16-M	2.0	0.0	10.0	3.0	0.5
CXY08-M	1.8	300 mA	12.6	3.2	0.5
DEQNA-SA	3.5	0.50	23.5	2.2	0.5
DPV11-SA	1.2	0.30	9.6	1.0	1.0
DRQ3B-SA	4.5	0.0	22.5	2.0	1.0
DRV1W-SA	1.8	0.0	9.0	2.0	1.0
DZQ11-SA	1.0	0.36	9.3	1.4	0.5
IBQ01-SA	5.0	0.30	28.6	4.6	1.0
IEQ11-SA	3.5	0.0	17.5	2.0	1.0
KA620-AA	6.2	0.14	32.7	2.7	1.0
KA630-AA	6.2	0.14	32.7	2.7	1.0
KDJ11-BF	5.5	0.2	29.9	2.6	1.0
KDJ11-SA/SB	3.47	0.19	19.6	3.0	1.0
MRV11-D	1.6[1]	0.0	8.0[1]	3.0	0.5
MS630-BB	1.8	0.0	9.0	0.0	0.0
MS630-CA	3.1	0.0	15.5	0.0	0.0
MSV11-JD	3.74	0.0	18.7	2.7	0.5
MSV11-JE	4.1	0.0	20.5	2.7	0.5

[1]Value is for the unpopulated module only.

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

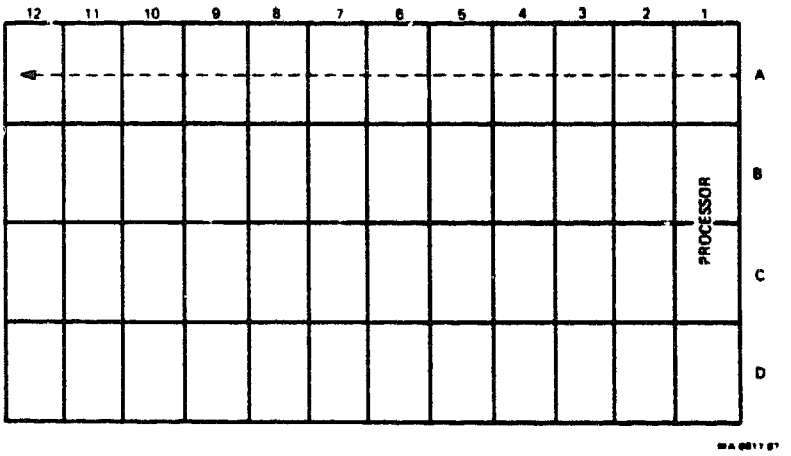
Factory-Installed Option	Current (Amps) (Max) +5 V	Current (Amps) (Max) +12 V	Power (Max) Watts	Bus Loads AC	Bus Loads DC
MSV11-QA	2.4	0.0	12.0	2.0	1.0
RQDX3-M	2.48	0.06	13.1	1.9	0.5
TQK50	2.9	0.0	14.5	2.8	0.5
M9060-YA	5.3	0.0	26.5	0.0	0.0
RD53A-EA	0.9	2.5	34.5	0.0	0.0
RD54A-EA	1.3	1.34	22.6	0.0	0.0
TK50E-EA	1.35	2.4	35.6	0.0	0.0

2.4.2 Guidelines for Module Placement

2.4.2.1 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. You must use a bus grant continuity card (M9074) in vacant backplane slots to ensure bus continuity.

Figure 2–4: Bus Grant Continuity Path



2.4.2.2 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 the power supply. Otherwise, the power supply enters an error mode and shuts down the system.

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

Refer to Section 2.7, Relocating Existing Modules, for procedures on installing or removing modules.

2.4.2.3 DZQ11-SA Bus Priority

Table 2-2 shows the recommended module sequence.

Table 2–2: Recommended Module Sequence

MicroVAX	MicroPDP-11/53	MicroPDP-11/83
KA620,KA630	KDJ11-SA/-SB	MSV11-JD/-JE
MS630-B/-C	MSV11-QA	KDJ11-BF
MRV11	MRV11	MRV11
DEQNA	DEQNA	DEQNA
DPV11	DPV11	DPV11
DFA01	DFA01	DFA01
DZQ11	DZQ11	DZQ11
CXA16	CXA16	CXA16
CXB16	CXB16	CXB16
CXY08	CXY08	CXY08
IEQ11[1]	IEQ11[1]	IEQ11[1]
IBQ01[1]	DRQ3B	DRQ3B
DRQ3B	DRV1W	DRV1W
DRV1W	TQK50[2]	TQK50[2]
TQK50[2]	RQDX3[2]	RQDX3[2]
RQDX3[2]		

[1]No restrictions on position.

[2]Not applicable for the BA214 enclosure.

2.4.3 Finding CSR Addresses and Interrupt Vectors

2.4.3.1 MicroPDP-11 Systems

For information on how to find CSR addresses and interrupt vectors for modules in a MicroPDP-11 system, refer to the *MicroPDP-11 Systems Maintenance Guide*.

2.4.3.2 MicroVAX Systems

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

You may also use the CONFIG program in the MicroVMS or the VMS SYSGEN utility to determine the correct CSR address and interrupt vector for the modules in the system. When you type in a list of the devices in the system, CONFIG automatically provides CSR address and interrupt vector information. Table 2–3 lists the devices supported by this utility.

Table 2–3: Devices Supported by SYSGEN

Device	Enter at DEVICE> Prompt
CXA16	DHV11
CXY08	DHV11
DEQNA	QNA
DPV11	DPV11
DRV1W	DR11W
DZQ11	DZ11
IEQ11	IEQ11
RQDX3	UDA
TQK50	TU81

To use the SYSGEN utility, type the following at the system command prompt.

```
MCR SYSGEN
```

Press <RETURN>. The utility responds with the prompt,

```
SYSGEN>
```

At the prompt, type

```
CONFIGURE
```

Press <RETURN>. The utility responds with the prompt,

```
DEVICE>
```

At this point, enter the abbreviation for each device already installed in the system and for each device you intend to install in the system. Table 2-3 lists the abbreviations.

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.

After you have entered all devices, enter <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. To exit from the SYSGEN utility, type <EXIT> at the SYSGEN prompt and press <RETURN>.

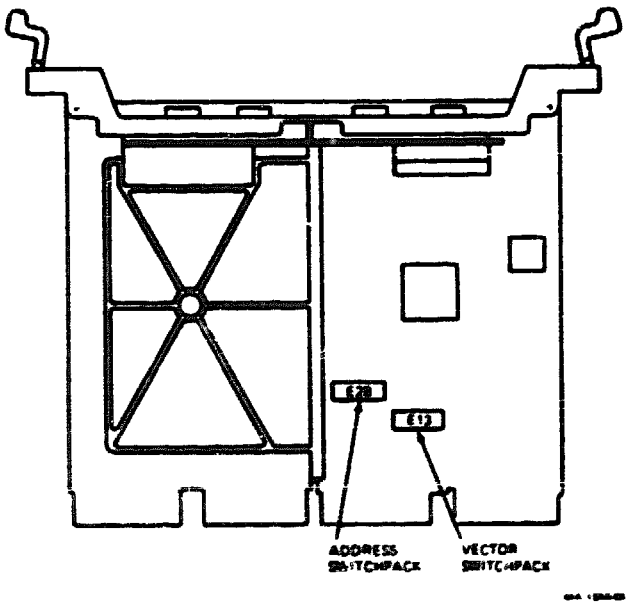
2.4.4 Configuring the DZQ11-SF Option

Before installing the DZQ11 module, you must define three parameters by selecting them on the module onboard switchpacks and jumpers. The parameters are listed below.

- Module address (CSR)
- Interrupt vector address
- Modem control

You select the CSR address and interrupt vector for the DZQ11 by using DIP switches (E28 and E13) on the module (Figure 2-5). The module uses a floating CSR address and interrupt vector.

Figure 2-5: DZQ11-SA Module Layout



The DZQ11 is factory set to a CSR address of 17760010 (octal) and an interrupt vector of 300 (octal). The factory settings are only correct if no other floating address or vector option is installed in the microsystem. Figure 2-6 shows the factory settings.

Figure 2-6: DZQ11-SA CSR and Interrupt Vector Factory Setting

	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	<- ADDRESS BITS
CSR	E28										<- SWITCHPACK
ADDRESS	1	2	3	4	5	6	7	8	9	10	<- SWITCHES
17760010	0	0	0	0	0	0	0	0	0	1	FACTORY
17760100	0	0	0	0	0	0	1	0	0	0	
17760110	0	0	0	0	0	0	1	0	0	1	
17760120	0	0	0	0	0	0	1	0	1	0	

1 = CLOSED, 0 = OPEN
ON OFF

	V8	V7	V6	V5	V4	V3	<- VECTOR BITS
INTERRUPT	E13						<- SWITCHPACK
VECTOR	1	2	3	4	5	6	<- SWITCHES
300	0	1	1	0	0	0	
310	0	1	1	0	0	1	

1 = CLOSED, 0 = OPEN
ON OFF

Switch position 7 of E13 is not used. Switch position 8 of E13 is a test switch which can disconnect the DZQ11 oscillator from all circuitry.

Switch	Status	Effect
SW7	Off	No effect (normal operation)
SW8	On	Connects oscillator to circuitry (normal operation).

NOTE: *Make sure that switch 8 is in the ON position before installation.*

Positions 9 and 10 of E13 control the DZQ11 response to a break character received on line 3. There are three valid options: HALT, BOOT, and no response (Table 2-4).

Table 2-4: Break Character Response Options

Switch 9	10	Effect of Break Character on Line 3
Off	Off	No effect (normal operation)
On	Off	Causes processor to halt (specific application).
Off	On	Causes processor to boot (specific application).
On	On	Illegal condition

2.5 Operating System Software Shutdown

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

Digital Field Service personnel should make sure that the customer has taken this step before continuing with the next section.

2.6 Testing the System

Test the existing system to make sure it is running properly.

1. Insert the diagnostic tape cartridge into the tape drive.
2. Run MicroVAX diagnostic monitor (MDM) for MicroVAX systems, or run the XXDP+ diagnostic for MicroPDP-11 systems. See Chapter 3 for further information on testing and troubleshooting.

CAUTION: *ALWAYS remove the tape cartridge from the tape drive before turning the* ⏻ *power switch off (0).*

After the successful completion of the test, remove the tape cartridge, turn the ⏻ power switch off (0) and unplug the ac power cord from the wall outlet.

2.7 Relocating Existing Modules

CAUTION: *Only qualified service personnel should remove or install modules.*

Check the recommended module order listed in Section 2.4.2.3. You may now need to relocate existing modules before you install the DZQ11 option. If you do not need to relocate existing modules, proceed to Section 2.7.1.

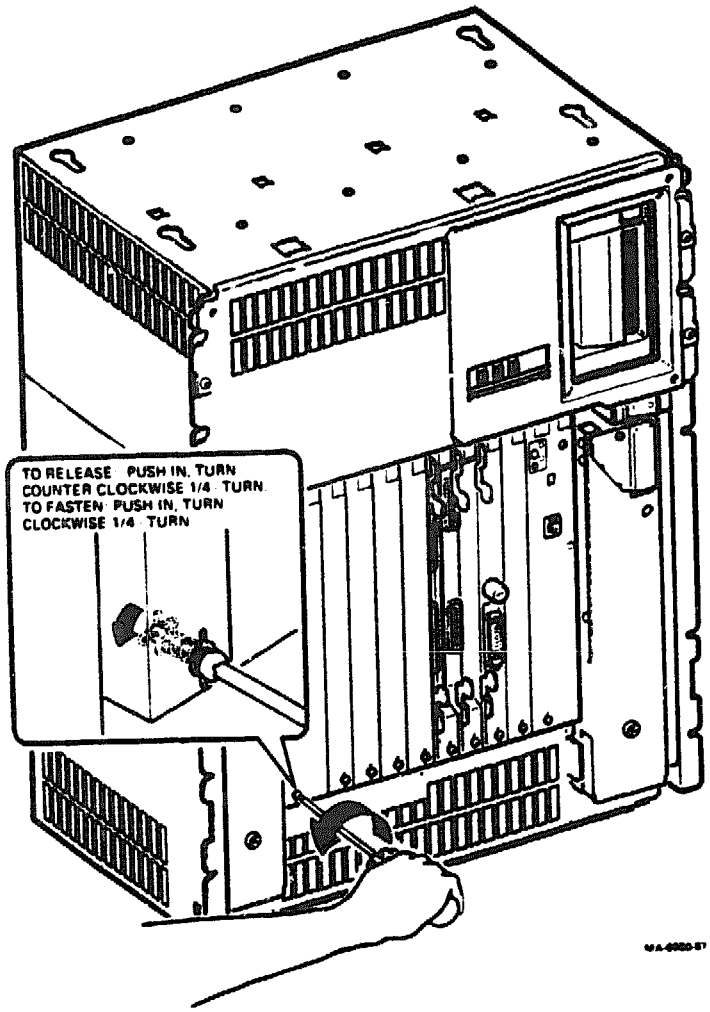
2.7.1 Modules with Handles

Use the following procedure to remove modules with handles.

CAUTION: *Make sure you are wearing an grounded antistatic wrist strap before removing or installing modules.*

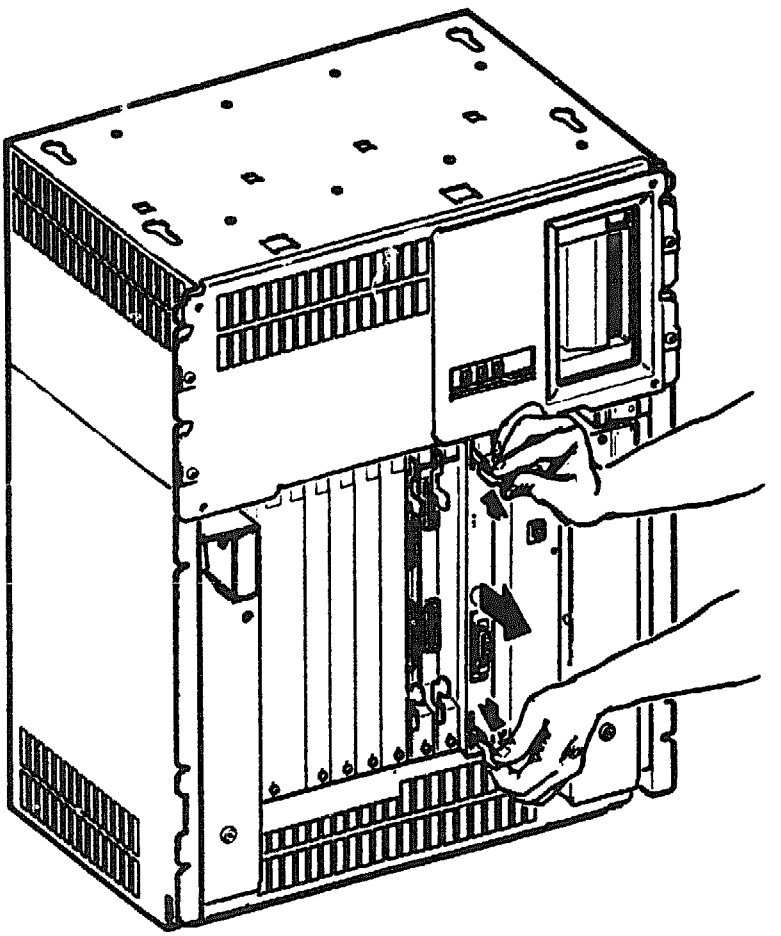
1. Note the orientation of external cables connected to the module. Carefully label and disconnect the cables.
2. Release the two 1/4-turn captive screws that hold the module's handle to the card cage (Figure 2-7).

Figure 2–7: Releasing the Captive Screws



3. Unlock the release levers by simultaneously 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 it from the card cage.
5. Confirm the module CSR address and interrupt vector; change jumpers and switch settings if necessary.
6. Reverse this procedure to install modules with handles. Do not fasten the 1/4-turn screws until you install the DZQ11 module.

Figure 2-8: Unlocking the Release Levers



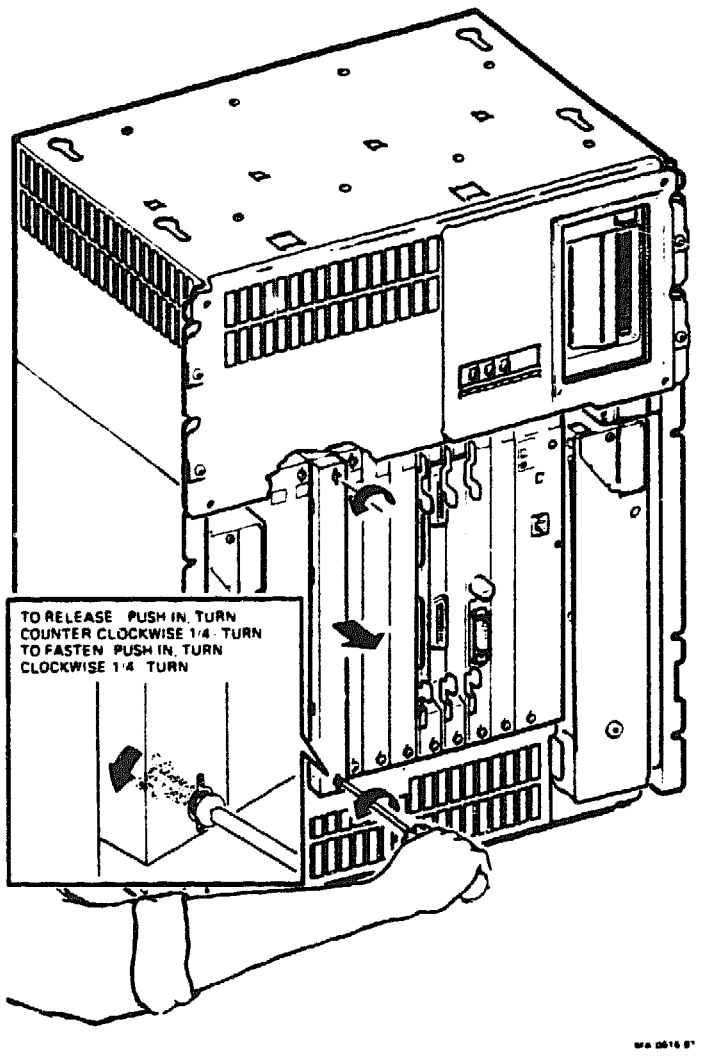
2.7.2 Modules with Blank Covers

Use the following procedure to remove modules with blank covers.

CAUTION: *Make sure you are wearing an grounded antistatic wrist strap before removing or installing modules.*

1. Release the two 1/4-turn captive screws that hold the blank cover to the card cage (Figure 2-9).

Figure 2-9: Removing the Blank Cover



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 lever by simultaneously pulling up on the top lever and pulling down on the bottom lever. For modules with plastic handles, pull out on the plastic handle and remove the module from the card cage.
5. Confirm the module's CSR address and interrupt vector; change jumpers and switch settings if necessary.
6. Reverse this procedure to install modules with blank covers. Do not fasten the 1/4-turn screws until you install the DZQ11 module.

2.8 Verifying the Ground Connections

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

Two gap filler assemblies (P/N 70-24071-01) are provided as part of the filler panel kit.

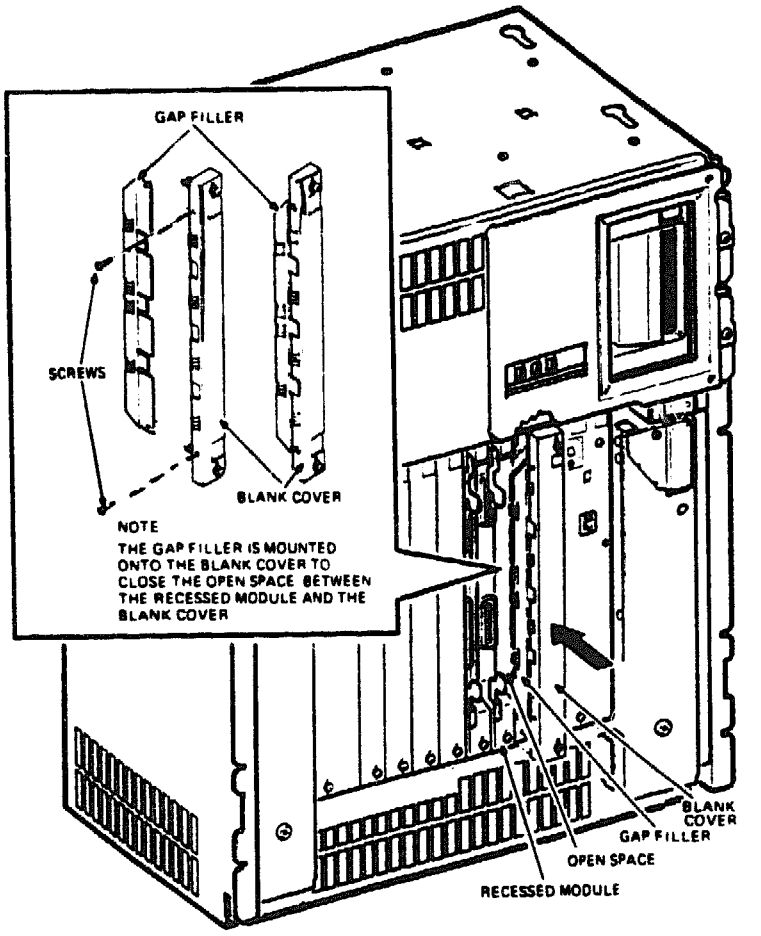
Before you install the DZQ11 option module, verify the ground connections as follows.

1. Check to see if any recessed-handle module has a module with a blank bulkhead cover or with 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 bulkhead cover or the flush-handle that is next to the recessed-handle module (Figure 2–10).

NOTE: *There SHOULD NOT be any open spaces between the modules.*

Figure 2–10: Ground Connections



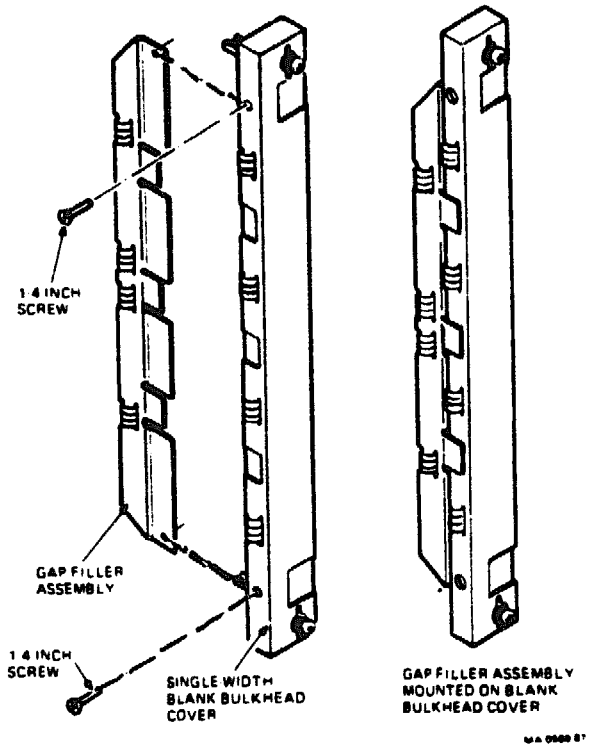
3. Install the gap filler assembly, if needed, as follows.

   - Using the two screws and a gap filler assembly supplied with the filler panel kit (P/N 70-24505-01), attach the gap filler assembly to the top and bottom of the side of the blank bulkhead cover or the flush-handle that fits next to the recessed-handle module. Make sure the gap filler assembly fit into the tab indentations on the blank bulkhead cover or the flush-handle (Figure 2-11).

     NOTE: *The gap filler assemblies that are included with the filler panel kit are provided as spares if not used with this installation.*

   - Place the blank bulkhead cover with the gap filler assembly onto the card cage.
   - Insert the flush-handle module with the gap filler assembly attached into the card slot.
   - Ensure that there is correct ground, with no open spaces, between the two modules.
   - Do not fasten the 1/4-turn captive screws until you have installed the DZQ11 module.

Figure 2–11: Attaching The Gap Filler Assembly

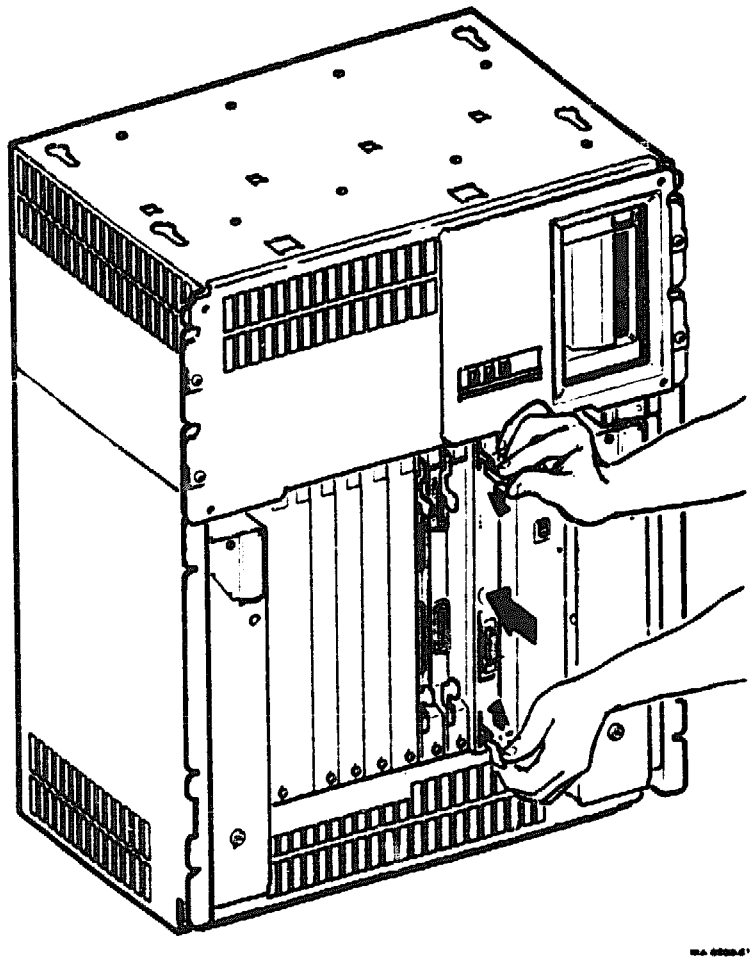


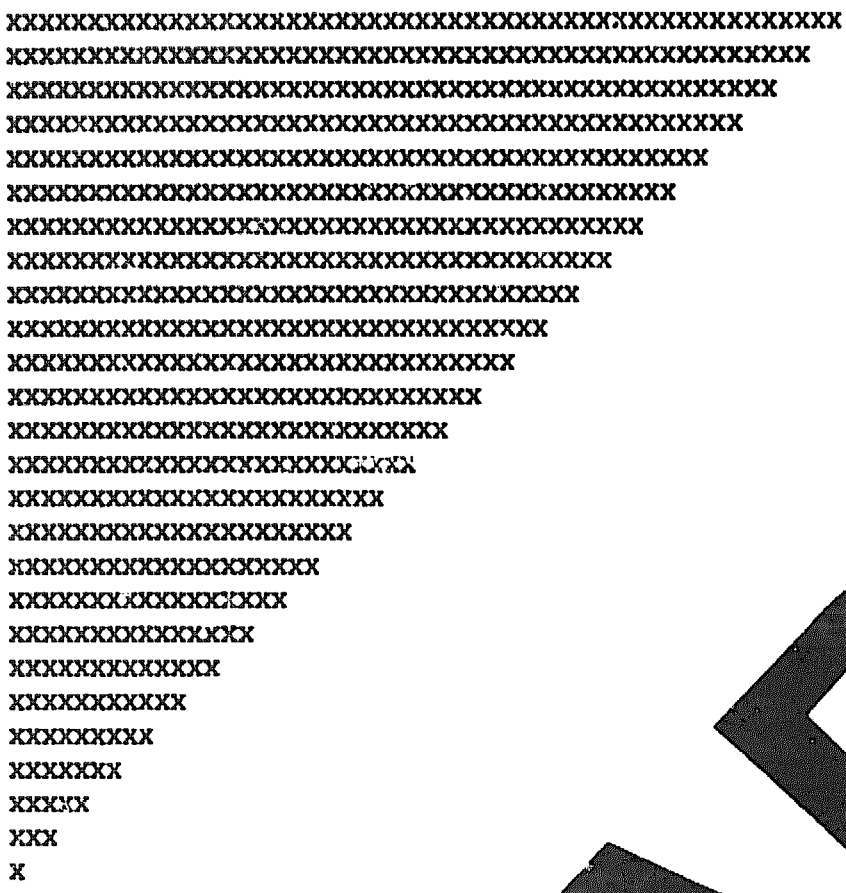
2.9 Installing the DZQ11 Module

CAUTION: *BE CAREFUL not to snag the module's components on the card guides or adjacent modules.*

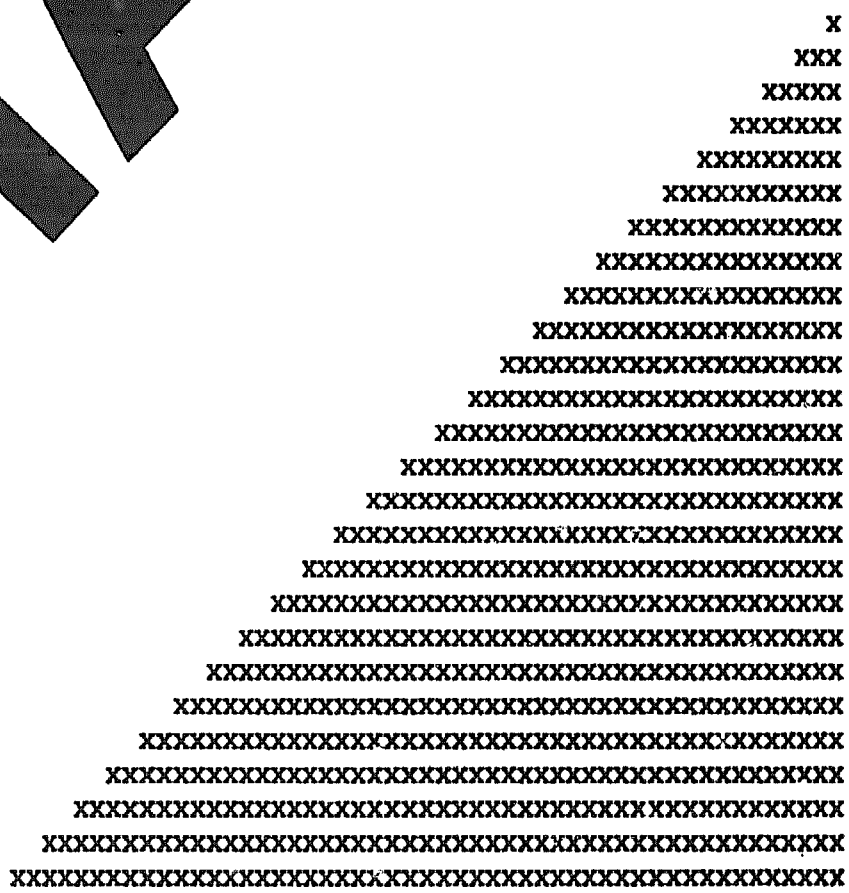
1. Insert the DZQ11 module into the appropriate card slot (Figure 2-12). The module will not be locked in place.
2. Holding both the top and bottom release levers, lock the module in place by simultaneously pushing down on the top lever and pulling up on the bottom lever.
3. Make sure that bus grant continuity is maintained from the CPU to the last module in the backplane. Insert bus grant cards where needed.
4. Fasten the two 1/4-turn screws on the DZQ11 and also on the other modules and bulkhead covers in the system.

Figure 2–12: Inserting the Module





CHAP 3



Chapter 3
Testing the New Configuration

This chapter outlines the tests you should use after you have performed the installation.

3.1 Testing MicroPDP-11 Systems

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

To verify that the MicroPDP-11 system and the DZQ11 module are functioning correctly, perform the following test procedure.

1. Plug the AC power cord into the wall outlet.
2. Turn the I/O power switch on (1).
3. Boot the MicroPDP-11 customer diagnostic media.
4. 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 that the new module is included. If it is not included, repeat the installation sequence, and make sure that the module switches have been set correctly.*

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

A MicroPDP-11 Maintenance Kit (Order No. ZYABX-GZ,P5) allows you to run individual diagnostic programs under the XXDP+ diagnostic monitor, and to configure and run DECX/11 system test programs. The XXDP+ functional diagnostic is VHQA??, and the DECX/11 module is XDHV??.OBJ.

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, refer to the *MicroPDP-11 Systems Maintenance Guide* (AZFI11A-MG) for troubleshooting procedures or further instructions on how to run XXDP+.

3.2 Testing MicroVAX Systems

NOTE: *For BA214 enclosures, use the Ethernet Server Kit to test the system (PN ZNA07-CM, -CP, or -C5).*

To verify that the MicroVAX system and the DZQ11 module are functioning correctly, perform the following test procedure.

1. Plug the AC power cord into the wall outlet.
2. Turn the I/O power switch on (1).
3. Boot the MicroVAX Maintenance System media.
4. Type <2> 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 that the new module is included. If it is not included, repeat the installation sequence, and make sure that the module switches have been set correctly.*

   Use the MicroVAX diagnostic monitor (MDM) to test a MicroVAX system. This software provides the following groups of menu-driven tests.

   - Verify-mode functional tests - user or field service
   - Verify-mode exerciser tests - user or field service
   - Service-mode exerciser tests - field service
   - Utility tests - field service
5. Run the verify-mode functional tests and exerciser tests. Then, run the service-mode exerciser tests.

These tests should complete without error. If an error occurs, refer to the *MicroVAX Systems Maintenance Guide* (EK-001AA-MG) for troubleshooting information.

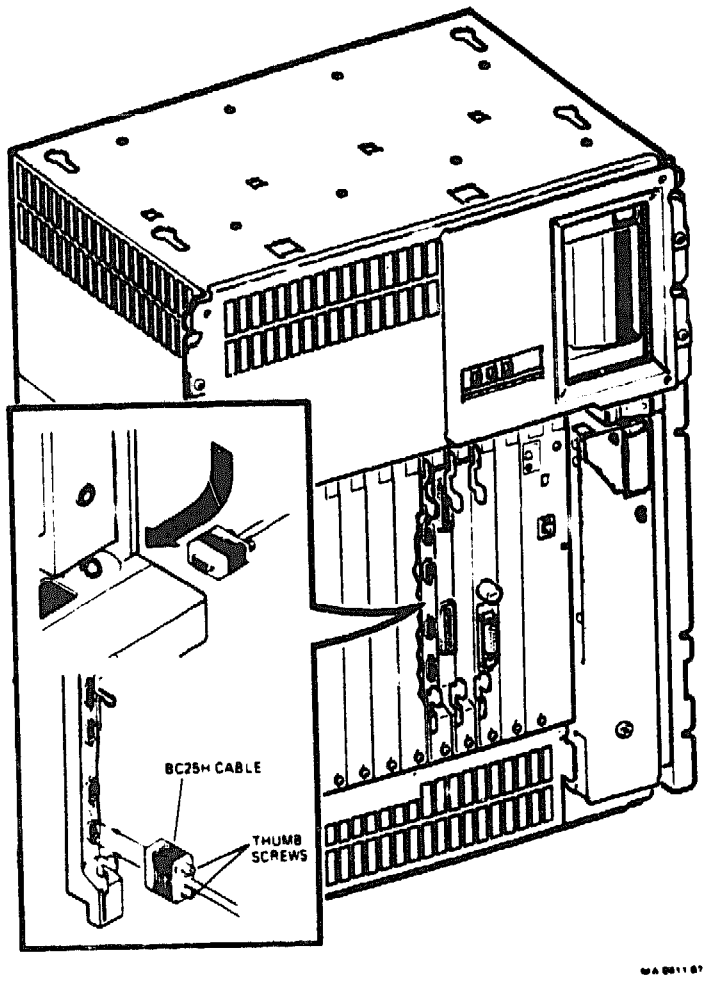
3.3 Connecting External Devices

NOTE: *BE SURE to remove the tape cartridge from the tape drive before turning off the* I/O *power switch (0).*

After the testing has been successfully completed, connect any external cables to the appropiate modules.

1. Turn off the I/O power switch (0) and unplug the ac power cord from the wall outlet.
2. Find a BC23H cable in the cable carton. The cable has a 9-pin connector at one end and a 25-pin connector at the other end.
3. Feed the end with the 9-pin connector under the system and plug it into the connector labeled 0 on the bulkhead handle. Tighten the thumb screws on the connector (Figure 3-1).

Figure 3–1: DZQ11-SF Cable Connections



4. Attach a modem to the 25-pin connector at the other end of the cable. If you want to place the modem farther away from the system, attach a BC22E modem cable between the BC23H cable and the modem. See your modem documentation for the location of the connector, and for instructions on using your modem.

Repeat the same procedure for connecting a second, third, and fourth cable to the connectors labeled 1, 2, and 3, respectively.

The installation procedure is now complete.

It is the customer's responsibility to bring-up the operating system software once installation is complete.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DZQ11-SF
Asynchronous Multiplexer Option
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