

StorageWorks Family

SF200 DECarray Installation Guide

Order Number: EK-SF2XX-IG. D01

This manual describes installing and configuring the SF200 DECarray cabinet, and SF-series storage enclosures and magazine tape ISEs in the DECarray cabinet.

Second Edition, May 1992
Third Edition, June 1993
Fourth Edition, November 1993

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This document was prepared using VAX DOCUMENT Version 2.1.

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Preface

This guide provides the information you will need to install and configure SF20 DECarray cabinet, and SF-series storage enclosures and magazine tape ISEs in the DECarray cabinet. The guide is intended for Digital Services and for personnel qualified to service the DECarray cabinet. The information in this guide is organized as follows:

- Chapter 1 contains a description of and specifications for the DECarray cabinet and SF-series storage enclosures.
- Chapter 2 contains site preparation information for a DECarray cabinet.
- Chapter 3 describes how to unpack a DECarray cabinet and where to place it with a system.
- Chapter 4 describes how to install the DECarray cabinet in a single-system and a DSSI VAXcluster configuration.
- Chapter 5 describes how to install SF3x series storage enclosures in a DECarray cabinet.
- Chapter 6 describes how to install SF7x series storage enclosures in a DECarray cabinet.
- Chapter 8 describes how to install TF-series magazine tape ISEs in a DECarray cabinet.
- Chapter 9 contains instructions for troubleshooting the installed DECarray cabinet, and the SF-series storage enclosure and magazine tape ISE upgrades.
- The appendixes provide information for referring to how the DECarray cabinet can be cabled for single-system and DSSI VAXcluster configurations, the procedures to add SF72-UK and SF73-UK upgrade kits to an SF7x-HK storage enclosure, the procedure to convert a single-system configuration to a DSSI VAXcluster configuration, and the procedure for installing a DECarray cabinet with VAX 4000 (all models) systems.

Related Documentation

Table 1 lists reference documentation that supplements this guide.

Table 1 Related Documentation

Title	Order Number
<i>KFMSA Module Installation and User Manual</i>	EK-KFMSA-IM
<i>KFQSA Module Installation and User Manual</i>	EK-KFQSA-IM
<i>RFxx Series Integrated Storage Element User Guide</i>	EK-RF7xD-UG
<i>TF857 Magazine Tape ISE Service Manual</i>	EK-TF857-SM
<i>DECarray Owner's Manual</i>	EK-SF7xS-OM
<i>System Expansion Installation Supplement</i>	EK-431AB-IN

1

Introduction

This chapter provides an overview of the DECarray cabinet, and the SF3x and SF7x series storage enclosures.

1.1 DECarray Overview

The DECarray is a storage rack cabinet designed to hold up to six SF-series storage enclosures and one or two magazine tape ISEs.

The DECarray is intended to be installed on one or both sides of a system. All operator control panels (OCPs) project through the front door of the storage array to allow easy access.

The Digital Storage System Interconnect (DSSI) cables from the host cabinet input/output (I/O) panel connect to the DSSI I/O panel at the bottom rear of the storage array. The DSSI I/O panel supports as many as 16 individual DSSI buses.

Introduction

1.1 DECarray Overview

Viewing the DECarray from the front, note that the SF-series storage enclosures and magazine tape ISEs are arranged in the DECarray cabinet as follows (Figure 1-1):

- The DECarray has four levels, each with two storage enclosure positions. The levels are numbered from the bottom up. Looking from the front, odd-numbered positions are on the left, and even-numbered positions are on the right, as shown in Table 1-1

Table 1-1 DECarray Storage Positions

Level	Left Position	Right Position
1	1	2
2	3	4
3	5	6
4	7	8

- Levels 1, 2, and 4 are reserved for SF-series storage enclosures only. Storage enclosure upgrades are installed into these levels in the following order: position 1, 2, 3, 4, 7, and 8.
- Level 3 is reserved for magazine tape ISEs. Magazine tape ISE upgrades are installed first in position 5, then in position 6.

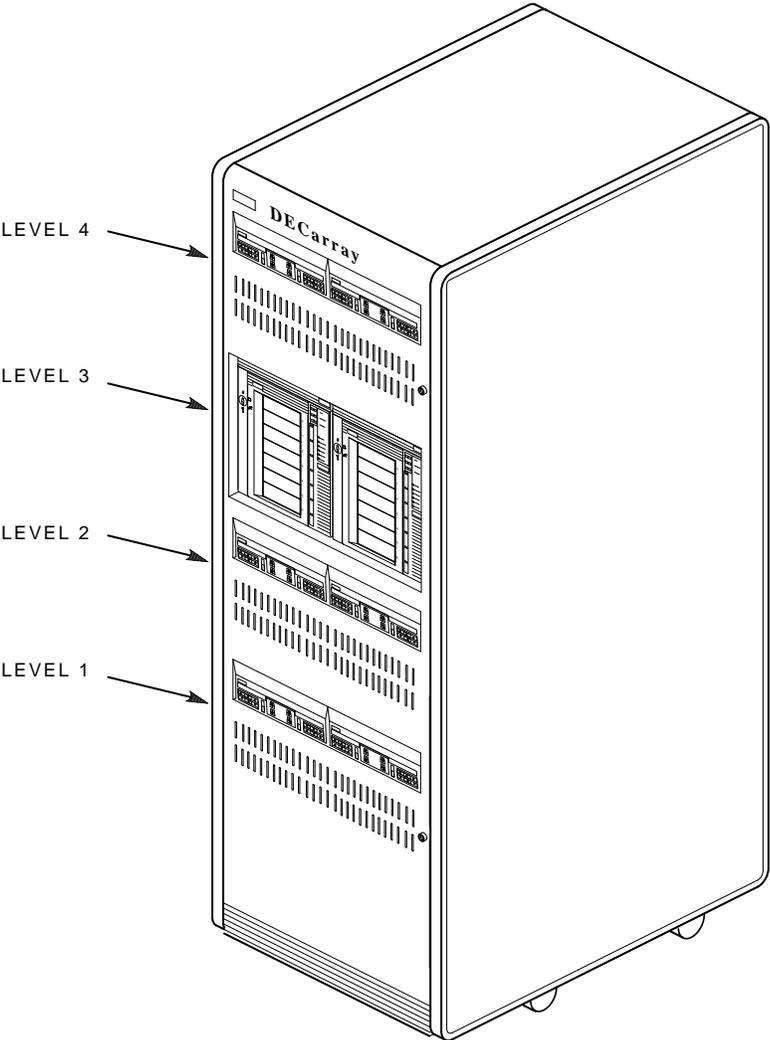
Note

The position numbers are visible on the right and left chassis side rails when the front and rear doors of the storage array are open.

Specifications for the DECarray are shown in Table 1-2.

Introduction
1.1 DECarray Overview

Figure 1-1 Front View of the DECarray



SHR-X1101A_91-DG

Introduction
1.1 DECarray Overview

Table 1–2 DECarray Specifications

Characteristic	Specification
Number of disk ISEs	Minimum: 2, maximum: 24
Formatted storage capacity	Minimum: 2, maximum: 48 (in 2 or 4 GB increments)
Dimensions (nominal)	152.4 cm (60.5 inches) H, 60.96 cm (24.0 inches) W, 76.2 cm (34.0 inches) D
Weight	
Minimum configuration	228 kg (500 lb)
Maximum configuration	454 kg (1000 lb)
Agency compliance	FCC, UL, IEC, CSA, and VDE
Temperature	+10°C to +40°C (+50°F to +104°F). Reduce rating by 1.8°C for each 1000 meters altitude (1.0°F for each 1000 feet altitude)
Humidity	10% to 85% @ maximum wet bulb temperature of +32°C (+90°F) and minimum dew point of +2°C (+36°F)
Recommended Environmental Limits¹	
Operating environment	
Temperature	18°C to 24°C (64.4°F to 75.2°F) with an average rate of change of 3°C/hour maximum and a step change of 3°C or less
Relative humidity	40% to 60% (noncondensing) with a step change of 10% or less (noncondensing)
Altitude	Up to 2400 meters (8000 feet)
Air quality (maximum particle count)	Not to exceed 500,000 particles per cubic foot of air at a size of 0.5 micron or larger
Air volume (at inlet)	50 cubic feet per minute (0.026 cubic meters per second)
Nonoperating environment	
Temperature	-40°C to +66°C (-40°F to +151°F)
Relative humidity	10% to 80%, noncondensing

¹These limits are for optimum equipment performance and reliability.

(continued on next page)

Introduction
1.1 DECarray Overview

Table 1–2 (Cont.) DECarray Specifications

Characteristic	Specification
Recommended Environmental Limits¹	
Altitude	4900 meters (16,000 feet)
Acoustic noise	6.8 bels
Nominal airflow through enclosure	360 to 520 cubic feet/minute
Input power requirements, with SF35 (47 to 63 Hz normal operation)	7.2 A (per phase) @ 100 to 120 Vac (60 Hz), 3.7 A (per phase) @ 220 to 240 Vac (50 Hz)
Power requirements during disk ISE spinup, with SF35	11.5 A @ 100 to 120 Vac (60 Hz), 6.1 A @ 220 to 240 Vac (50 Hz)
Input power requirements, with SF72 (47 to 63 Hz normal operation)	6.00 A (per phase) @ 100 to 120 Vac (60 Hz), 3.00 A (per phase) @ 220 to 240 Vac (50 Hz)
Power requirements during disk ISE spinup, with SF72	21.0 A @ 100 to 120 Vac (60 Hz), 10.5 A @ 220 to 240 Vac (50 Hz)
Input power requirements, with SF73 (47 to 63 Hz normal operation)	6.6 A (per phase) @ 100 to 120 Vac (60 Hz), 3.8 A (per phase) @ 220 to 240 Vac (50 Hz)
Power requirements during disk ISE spinup, with SF73	12.8 A @ 100 to 120 Vac (60 Hz), 7.5 A @ 220 to 240 Vac (50 Hz)

¹These limits are for optimum equipment performance and reliability.

Introduction

1.2 Storage Enclosure Overview

1.2 Storage Enclosure Overview

The SF-series storage enclosures come in two series: the SF3x enclosure that contains up to 12 half-height, 3 1/2-inch ISEs, and the SF7x enclosure that contains up to 4 full-height, 5 1/4-inch ISEs.

Each disk ISE within an SF-series enclosure is independently controlled from the OCP on the front of the enclosure. A power supply in the enclosure provides the dc power and cooling for all disk ISEs installed in the enclosure.

The SF3x storage enclosure (Figure 1–2) holds up to 12 RF3x series ISEs. There are six slots in the front of the enclosure and six slots in the rear. Disk ISEs installed in these slots plug directly into a backplane, which is cabled to a connector tray on the top rear of the storage enclosure.

The SF3x enclosure can be configured in through-bus mode or split-bus mode. In through-bus mode, the six ISEs in the front of the SF3x enclosure are connected to a single DSSI bus, and the six ISEs on the rear of the SF3x enclosure are connected to a second DSSI bus. In split-bus mode, each end of the enclosure (front and rear) is further divided into left-side ISEs and right-side ISEs, each connected to a separate DSSI bus. Thus, in split-bus mode there are four DSSI buses, each with three drives connected to it.

The SF7x series storage enclosure (Figure 1–3) holds either two or four RF7x series ISEs. The ISEs in the SF7x storage enclosure can also be configured in split-bus or through-bus mode. In through-bus mode, all four disk ISEs are connected to a single DSSI bus. In split-bus mode, the left-side ISEs are connected to one DSSI bus, while the right-side ISEs are connected to a second DSSI bus.

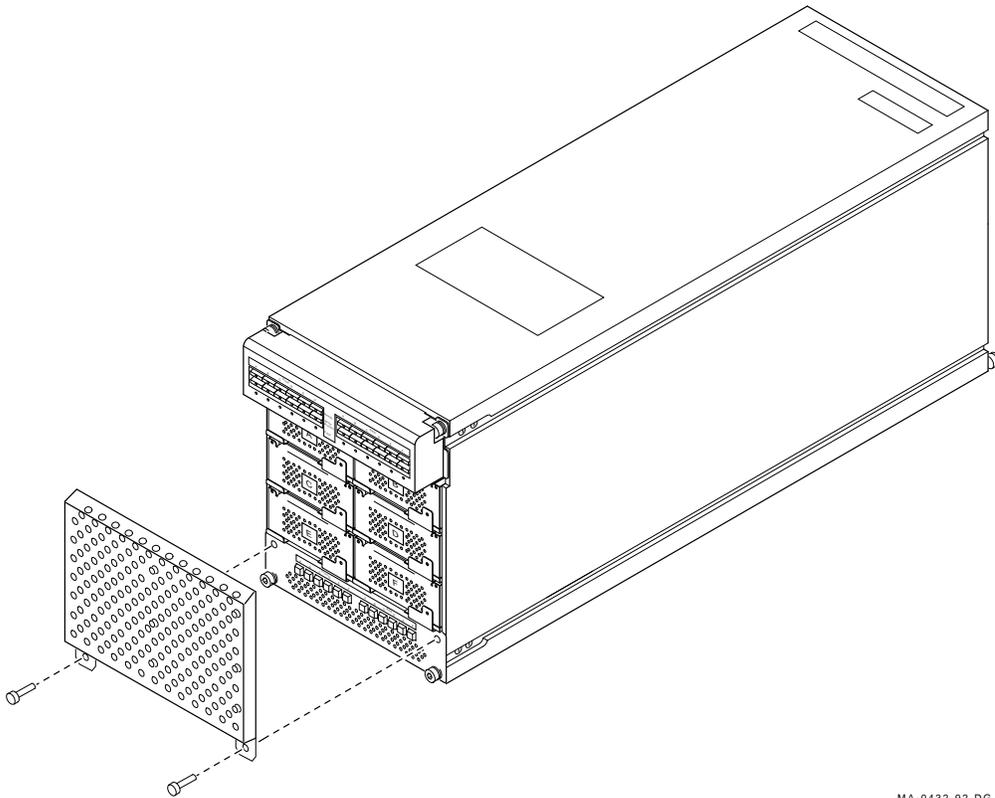
Both SF-series storage enclosures have the following features:

- It can operate in one of two modes: through-bus or split-bus.
- Each disk ISE has its own set of switches and indicators on the OCP.
- The enclosure power supply provides operating power to all disk ISEs and other subassemblies in the enclosure.
- The drive dc power switches for the disk ISEs are on the front panel of the storage enclosure.

Specifications for the SF3x series storage enclosure are shown in Table 1–3, and Table 1–4 shows the specifications for the SF7x series storage enclosure.

Introduction
1.2 Storage Enclosure Overview

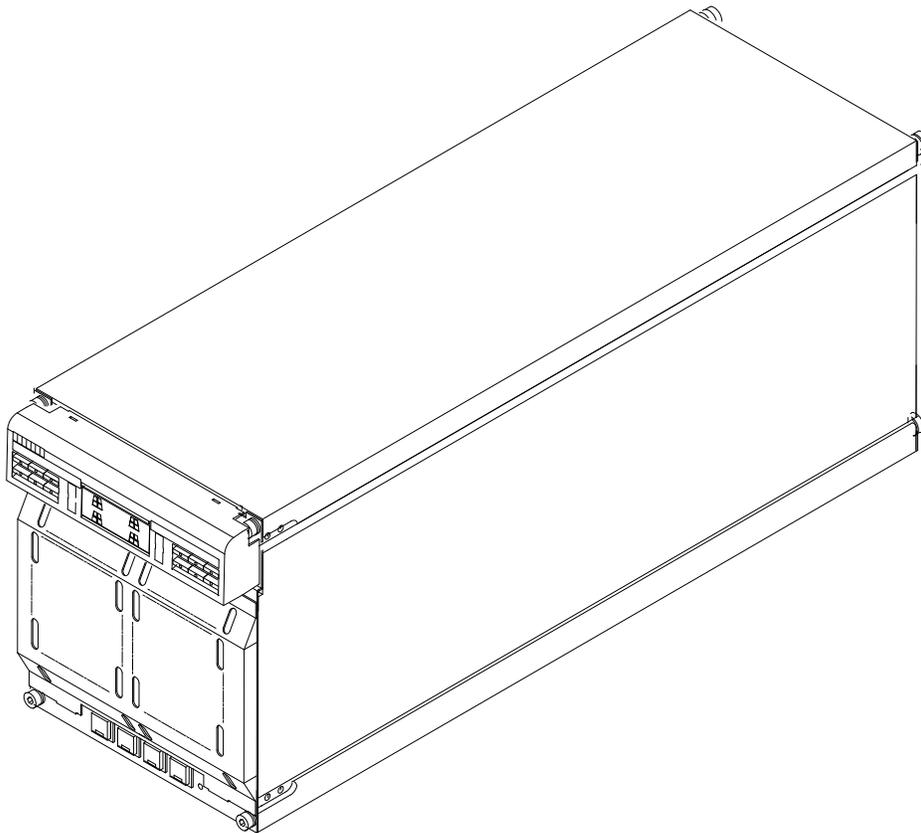
Figure 1–2 SF3x Series Storage Enclosure with Front Cover Removed



MA-0432-92.DG

Introduction
1.2 Storage Enclosure Overview

Figure 1–3 SF7x Series Storage Enclosure



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Introduction
1.2 Storage Enclosure Overview

Table 1–3 SF3x Storage Enclosure Specifications

Characteristic	SF35 Specification	SF36 Specification
Formatted storage capacity		
SF3x–BK ¹	1.7 GB	3.2 GB
SF3x–HK ²	5.1 GB	9.6 GB
SF3x–JK ²	10.2 GB	19.2 GB
Dimensions	H = 26.7 cm (10.5 inches) W = 22.2 cm (8.75 inches) D = 71.1 cm (28 inches)	Same as SF35
Weight		
SF3x–BK ¹	26 kg (58 lb)	Same as SF35
SF3x–HK ²	33 kg (73 lb)	
SF3x–JK ³	40 kg (88 lb)	
Agency compliance	FCC, UL, IEC, CSA, and VDE	Same as SF35
Temperature	+10°C to +40°C (+50°F to +104°F). Decrease the rating 1.8°C for each 1000 meters altitude (1.0°F for each 1000 feet altitude)	Same as SF35
Humidity	10% to 85% @ maximum wet bulb temperature of +32°C (+90°F) and minimum dew point of +2°C (+36°F)	Same as SF35
Recommended Environmental Limits⁴		
Operating environment		
Temperature	18°C to 24°C (64.4°F to 75.2°F) with an average rate of change of 3°C/hour maximum and a step change of 3°C or less	Same as SF35
Relative humidity	40% to 60% (noncondensing) with a step change of 10% or less (noncondensing)	Same as SF35
Altitude	Up to 2400 meters (8000 feet)	Same as SF35

¹The SF3x–BK contains two disk ISEs.

²The SF3x–HK contains six disk ISEs.

³The SF3x–JK contains twelve disk ISEs.

⁴These limits are for optimum equipment performance and reliability.

(continued on next page)

Introduction

1.2 Storage Enclosure Overview

Table 1–3 (Cont.) SF3x Storage Enclosure Specifications

Characteristic	SF35 Specification	SF36 Specification
Recommended Environmental Limits⁴		
Air quality (maximum particle count)	Not to exceed 500,000 particles per cubic foot of air at a size of 0.5 micron or larger	Same as SF35
Air volume (at inlet)	50 cubic feet per minute (0.026 cubic meters per second)	Same as SF35
Nonoperating environment		
Temperature	-40°C to +66°C (-40°F to +151°F)	Same as SF35
Relative humidity	10% to 80%, noncondensing	Same as SF35
Altitude	4900 meters (16,000 feet)	Same as SF35
SF3x enclosure acoustic noise	6.20 bels	Same as SF35
Nominal airflow through enclosure	45 to 65 cubic feet/minute	Same as SF35
SF3x Input power requirements (47 to 63 Hz normal operation)	3.0 A @ 100 to 120 Vac (60 Hz), 1.5 A @ 220 to 240 Vac (50 Hz)	3.2 A @ 100 to 120 Vac (60 Hz), 1.9 A @ 220 to 240 Vac (50 Hz)
SF3x Power requirements during disk ISE spinup	4.5 A @ 100 to 120 Vac (60 Hz), 2.3 A @ 220 to 240 Vac (50 Hz)	Same as SF35

⁴These limits are for optimum equipment performance and reliability.

Introduction
1.2 Storage Enclosure Overview

Table 1–4 SF7x Storage Enclosure Specifications

Characteristic	Specification
Number of disk ISE positions	4 (RF series disk ISEs)
Formatted storage capacity	
SF72–HK ¹	2 GB
SF72–JK ²	4 GB
SF73–HK ¹	4 GB
SF73–JK ²	8 GB
SF74–AE ⁴	3.5 GB
SF74–JE ⁴	14 GB
Dimensions	H = 26.7 cm (10.5 inches) W = 22.2 cm (8.75 inches) D = 71.1 cm (28 inches)
Weight	
SF72–HK ¹	33 kg (72 lb)
SF72–JK ²	41 kg (90 lb)
SF73–HK ¹	33 kg (72 lb)
SF73–JK ²	41 kg (90 lb)
SF74–AE ⁴	33 kg (72 lb)
SF74–JE ⁴	41 kg (90 lb)
Agency compliance	FCC, UL, IEC, CSA, and VDE
Temperature	+10°C to +40°C (+50°F to +104°F). Decrease rating 1.8°C for each 1000 meters altitude (1.0°F for each 1000 feet altitude)
Humidity	10% to 85% @ maximum wet bulb temperature of +32°C (+90°F) and minimum dew point of +2°C (+36°F)

Recommended Environmental Limits³

Operating environment

¹The SF72–HK contains two RF72 disk ISEs. The SF73–HK contains two RF73 disk ISEs.

²The SF72–JK contains four RF72 disk ISEs. The SF73–JK contains four RF73 disk ISEs.

³These limits are for optimum equipment performance and reliability.

⁴The SF74–AE contains one RF74 disk ISEs. The SF74–JE contains four RF74 disk ISEs

(continued on next page)

Introduction

1.2 Storage Enclosure Overview

Table 1–4 (Cont.) SF7x Storage Enclosure Specifications

Characteristic	Specification
Recommended Environmental Limits³	
Temperature	18°C to 24°C (64.4°F to 75.2°F) with an average rate of change of 3°C/hour maximum and a step change of 3°C or less
Relative humidity	40% to 60% (noncondensing) with a step change of 10% or less (noncondensing)
Altitude	Up to 2400 meters (8000 feet)
Air quality (maximum particle count)	Not to exceed 500,000 particles per cubic foot of air at a size of 0.5 micron or larger
Air volume (at inlet)	50 cubic feet per minute (0.026 cubic meters per second)
Nonoperating environment	
Temperature	-40°C to +66°C (-40°F to +151°F)
Relative humidity	10% to 80%, noncondensing
Altitude	4900 meters (16,000 feet)
SF72 enclosure acoustic noise	6.2 bels
SF73 enclosure acoustic noise	6.0 bels
SF74 enclosure acoustic noise	6.1 bels
Nominal airflow through enclosure	45 to 65 cubic feet/minute
SF72 Input power requirements (47 to 63 Hz normal operation)	2.70 A @ 100 to 120 Vac (60 Hz), 1.20 A @ 220 to 240 Vac (50 Hz)
SF72 Power requirements during disk ISE spinup	3.50 A @ 100 to 120 Vac (60 Hz), 3.25 A @ 220 to 240 Vac (50 Hz)
SF73 Input power requirements (47 to 63 Hz normal operation)	2.4 A @ 100 to 120 Vac (60 Hz), 1.3 A @ 220 to 240 Vac (50 Hz)
SF73 Power requirements during disk ISE spinup	4.7 A @ 100 to 120 Vac (60 Hz), 2.4 A @ 220 to 240 Vac (50 Hz)
SF74 Input power requirements (47 to 63 Hz normal operation)	2.8 A @ 100 to 120 Vac (60 Hz), 1.6 A @ 220 to 240 Vac (50 Hz)

³These limits are for optimum equipment performance and reliability.

(continued on next page)

Introduction
1.2 Storage Enclosure Overview

Table 1–4 (Cont.) SF7x Storage Enclosure Specifications

Characteristic	Specification
Recommended Environmental Limits³	
SF74 Power requirements during disk ISE spinup	4.8 A @ 100 to 120 Vac (60 Hz), 2.9 A @ 220 to 240 Vac (50 Hz)

³These limits are for optimum equipment performance and reliability.

2

DECarray Site Preparation

The DECarray cabinet is intended for installation in a Class A computer room environment. Before installing the DECarray, make sure the following conditions are met:

- The DECarray cabinet requires 3-phase ac power. Each phase draws up to 7.2 amperes in a fully configured array.
- Adequate space is provided around the DECarray cabinet for opening the front and rear doors, for accessing cables, and for adequate airflow.
- The installation site floor can safely bear the weight of the DECarray cabinet. The DECarray cabinet with power controller weighs 180 kilograms (396 pounds); a fully configured DECarray weighs 454 kilograms (1000 pounds).
- The system's configuration sheet has been correctly filled out and is up-to-date. Blank system configuration sheets can be found in Appendix E.
- An adequate number of DSSI adapter modules are installed in the system to support all the DSSI devices in the DECarray.
- The correct NEMA plug or plugs are available (Figure 2-1).

DECarray Site Preparation

Figure 2–1 NEMA Plugs (for 881 and 887 Power Controllers)

POWER CORDS FROM REAR OF ENCLOSURE (TO POWER CONTROLLER)

<p>120/240V 47-63HZ 10A/6A POWER CORD DEC NO. A-PS-1700442-18 OR A-PS-1700442-19 USED WITH 881 POWER CONTROLLER</p>	
--	---

PLUGS GOING TO WALL OUTLET (FROM CONTROLLER)

<p>120/208V AC 60HZ 30A 3-PHASE WYE USED WITH 881-A AND 881-C POWER CONTROLLERS</p>		<p>5-WIRE NEMA NO. L21-30P</p>
<p>220-240/380-415V AC 50HZ 20A OR 16A 3-PHASE WYE USED WITH 881-B POWER CONTROLLER</p>		<p>5-WIRE, 4-POLE, IEC 309</p>

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DECarray Site Preparation

Proper grounding between the DECarray and any enclosures connected through a common DSSI bus is required.

WARNING

If the enclosures are not connected to a common ground, there is a potential for a personal safety hazard.

If the ground offset voltages generated in the power distribution system exceed allowable limits, data transmission across the DSSI bus can be affected. In this case, the system(s) could experience significant performance degradation or possible data corruption.

For a DSSI installation, the maximum ground offset voltage differential allowed between enclosures is as follows:

DSSI Bus Length ¹		Allowable Offset	
Meters	Feet	DC	AC
Up to 20	Up to 65	200 mv	70 mv (rms)
20-25	65-82	40 mv	14 mv (rms)

¹The total length includes all DSSI cable lengths, internal and external to the enclosures.

Ensure that the power distribution systems meet local codes prior to DSSI system installation. In a properly wired power distribution system(s) with properly functioning equipment (no ground faults) connected to it, there is generally no need for any further attention to grounding. The power distribution system provides a satisfactory path between enclosures.

To make sure that this is the case, perform a power system survey before installation. Check for the following conditions:

1. Do any outlets being used not have power ground connections?
2. Is the grounding prong missing on any of the computer equipment power cords?
3. Are any of the power outlet neutral connections actually ground connections?
4. Are the grounds for any of the power distribution circuits (outlets) not connected to the same power distribution panel?

DECarray Site Preparation

5. Are any devices that are not UL or IEC approved connected to the same breaker as any of the DSSI computer equipment?

If the previous conditions do not exist, then the grounding should be adequate for DSSI operation. Digital recommends that the ground offset voltage between any two enclosures be measured. However, this only provides data for that particular moment in time. Ground offset values may change as additional devices are connected to the same power source.

If the installation exhibits ground offset voltages between interconnected enclosures that exceed the allowable limits, use one of the following solutions:

1. Have an electrician correct any deficiencies detected during the power system survey. This is the recommended solution.
2. Install grounding cables between enclosures. Grounding cables are available from Digital, and come with the necessary hardware for installation.

Installing additional grounding cables normally reduces the ground voltage offset sufficiently to meet the requirements. In severe cases, however, the cables may not be large enough. This is revealed by the ground offset voltage measurements. If the additional grounding cables are not adequate, the source of the ground offset voltage must be traced and either reduced or eliminated.

3

Unpacking the DECarray

Before unpacking the DECarray cabinet, make sure that the site is ready to receive it. Refer to Chapter 2 for site preparation information and to Chapter 1 for specifications.

This chapter describes how to:

- Unpack the DECarray cabinet (Section 3.1)
- Remove the DECarray cabinet from the shipping pallet (Section 3.2)
- Place the DECarray cabinet with the system (Section 3.3)
- Level the DECarray cabinet (Section 3.4)
- Inspect the DECarray cabinet before installation (Section 3.5)

Unpacking the DECarray

3.1 Unpacking

3.1 Unpacking

The DECarray cabinet is packed in a cardboard carton attached to a wooden shipping pallet and covered with plastic protection.

Note

Before unpacking the equipment, inspect the shipping carton for signs of external damage. Report any damage to the local carrier and either Digital Services or the sales office.

Note

Retain the shipping container and all packing materials.

CAUTION

Failure to stabilize the equipment thermally may damage the drive media or associated electronics when the unit is powered up.

Remove the outer shipping carton, but leave the unit in place for at least 24 hours (thermal stabilization time). Thermal stabilization begins when the equipment is placed in the room where it is to be installed.

WARNING

Adhere to electrostatic discharge (ESD) procedures at all times. Use the ESD straps available with every array. The straps are inside the front and rear doors.

Once the DECarray cabinet is unpacked, examine the front and rear doors, the right and left side panels, and the undercarriage for any apparent damage. Report any damage.

Unpacking the DECarray
3.2 Removing the DECarray from the Pallet

3.2 Removing the DECarray from the Pallet

This section describes the procedure for removing the DECarray cabinet from the pallet and leveling it.

WARNING

Serious personal injury may result if correct safety conditions are not met. During the unpacking procedure, personnel should wear safety glasses. Inspect the ramps, ramp side rails, and metal hardware for the following defects:

- Cracks more than 25 percent of the ramp depth, either across or lengthwise on the ramp
- Knots or knotholes going through the thickness of the ramp and greater than 50 percent of the ramp width
- Loose, missing, or broken ramp side rails
- Loose, missing, or bent metal hardware

If any of these defects exist, **DO NOT USE THAT RAMP**. Investigate alternate means of removing the array or order a new ramp. The part number for the left ramp is 99-07689-01. The part number for the right ramp is 99-07689-02.

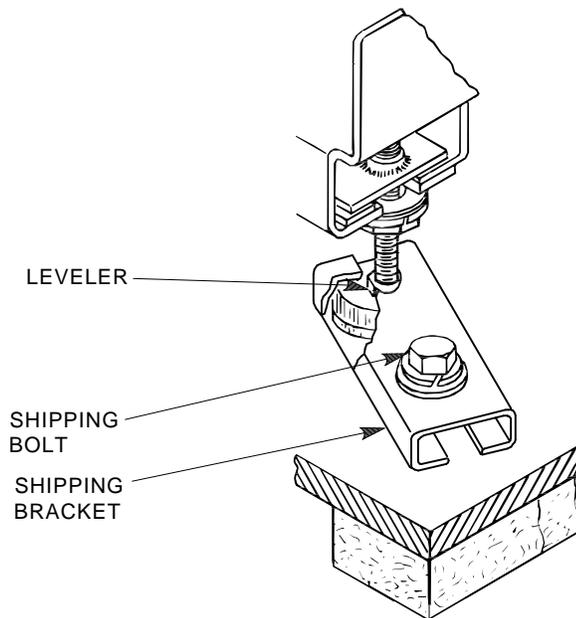
Unpacking the DECarray

3.2 Removing the DECarray from the Pallet

Use the following procedure to remove the DECarray cabinet from the shipping pallet (Figure 3-2):

1. Remove the two unloading ramps.
2. Remove the cardboard carton and packing material.
3. Examine the equipment for physical damage.
4. Remove the shipping bolts (Figure 3-1).

Figure 3-1 Shipping Bolts

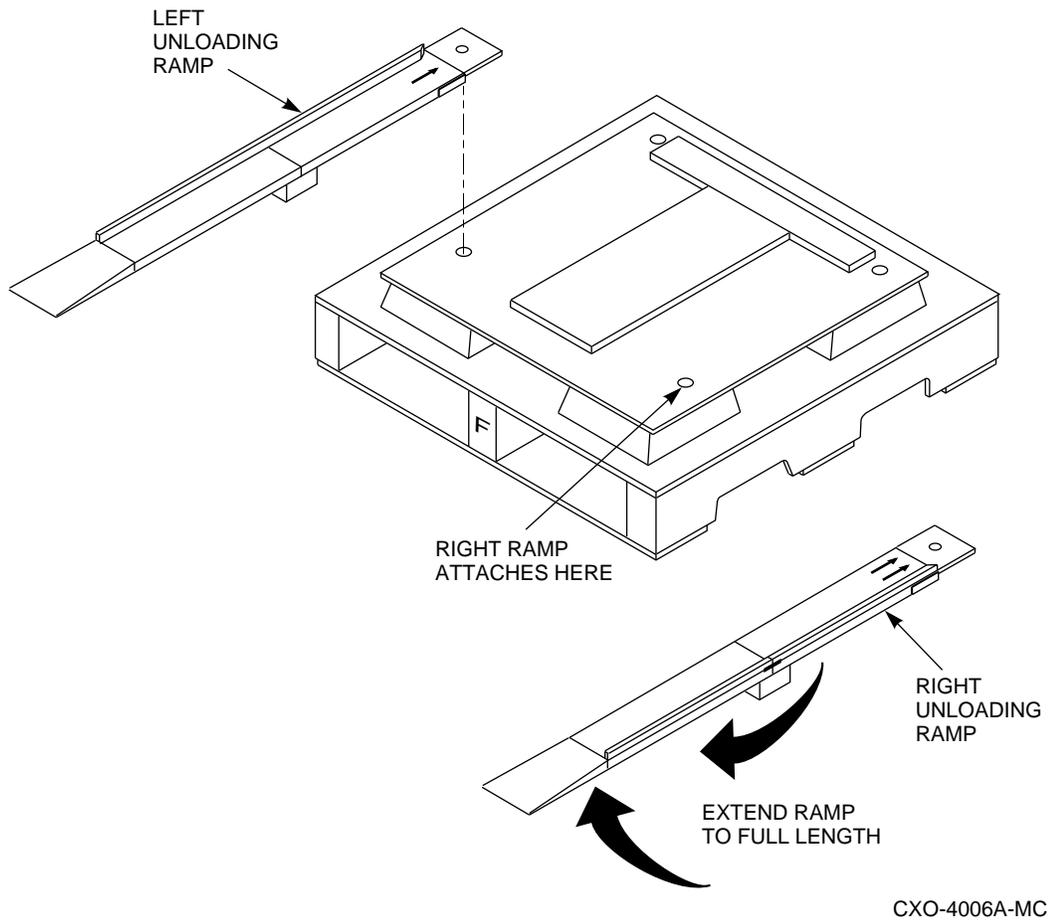


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Unpacking the DECarray 3.2 Removing the DECarray from the Pallet

5. Remove the shipping brackets from the cabinet levelers.
6. Extend the ramp to its full length, and insert the steel dowel as shown in Figure 3-2.

Figure 3-2 Ramp Installation on Shipping Pallet

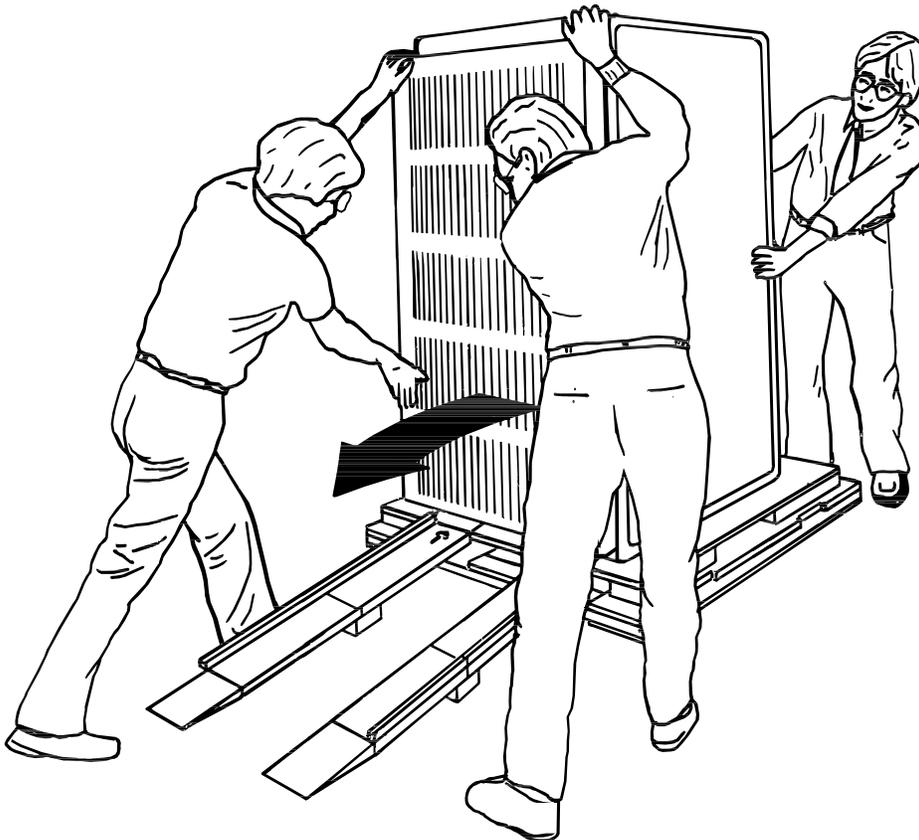


Unpacking the DECarray

3.2 Removing the DECarray from the Pallet

7. Position the unloading ramps on the pallet by fitting the grooved end of each ramp over the metal mating strip on the pallet.
8. Screw the cabinet levelers all the way up until the storage array cabinet rests on its rollers on the pallet.
9. Loosen the locking nuts on all four leveler feet.
10. Carefully roll the DECarray cabinet down the ramps. Three people are required to unload the DECarray from the shipping pallet (Figure 3-3).

Figure 3-3 Storage Array Removal from the Pallet



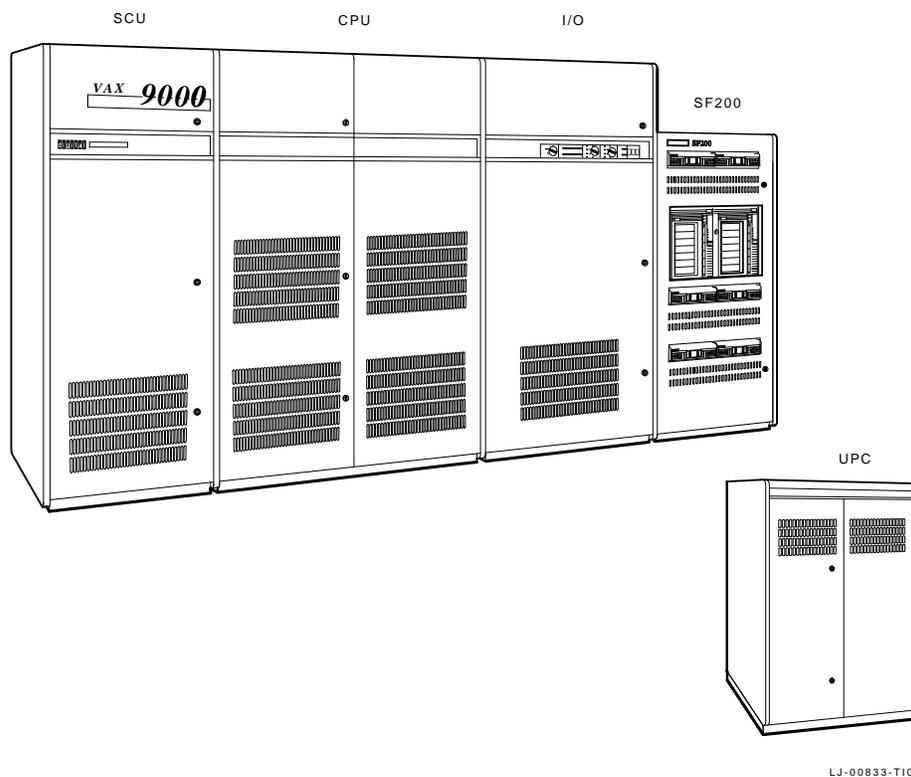
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Unpacking the DECarray 3.3 Positioning the DECarray Cabinet

3.3 Positioning the DECarray Cabinet

Move the array to its final position, a distance not to exceed 0.9 meters (3 feet) from any system cabinet. Refer to Figure 3-4, 3-5, and 3-6 for example cabinet positions.

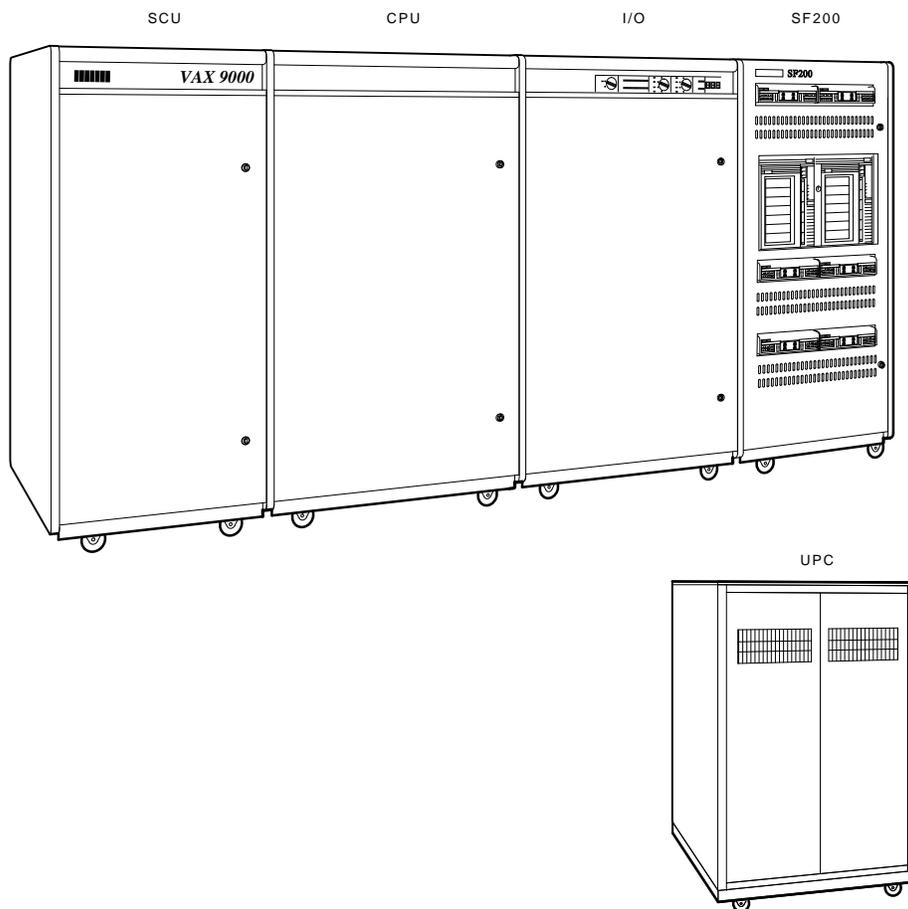
Figure 3-4 DECarray with a VAX 9000 Model 400 System



Unpacking the DECarray

3.3 Positioning the DECarray Cabinet

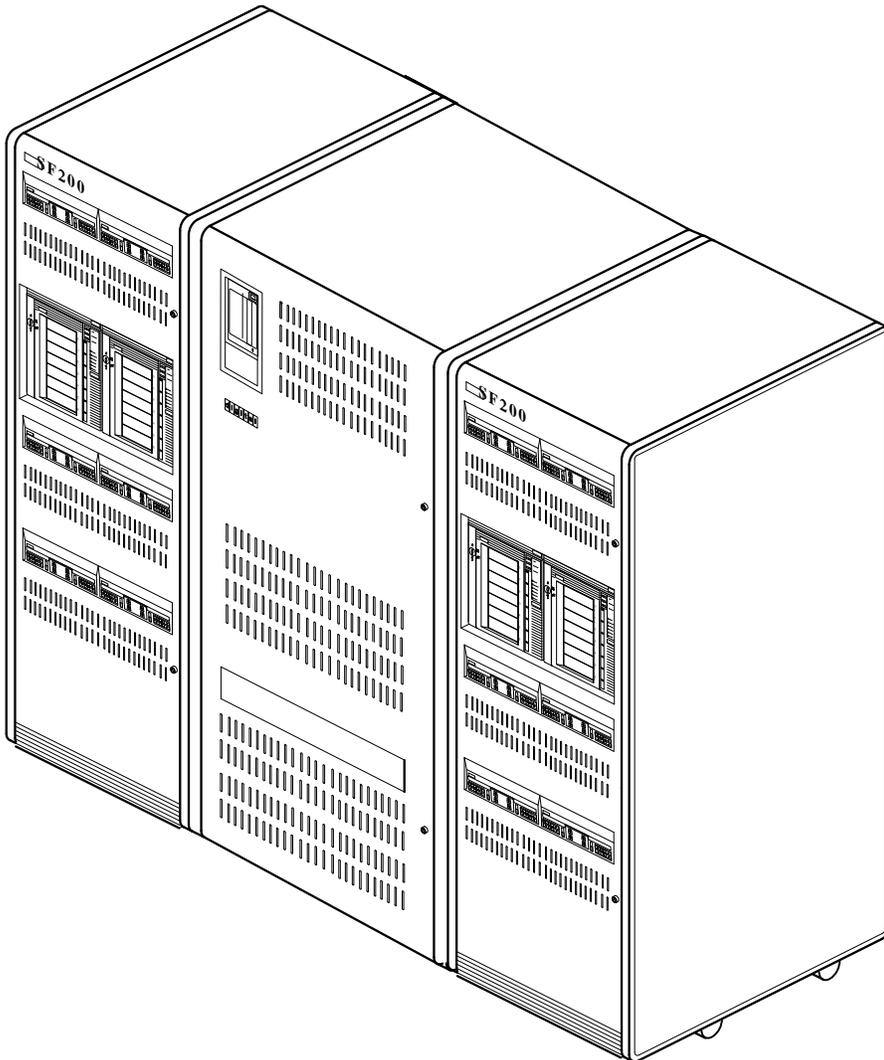
Figure 3-5 DECarray with a VAX 9000 Model 200 System



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Unpacking the DECarray 3.3 Positioning the DECarray Cabinet

Figure 3-6 DECarray with a VAX 6000 System



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Unpacking the DECarray

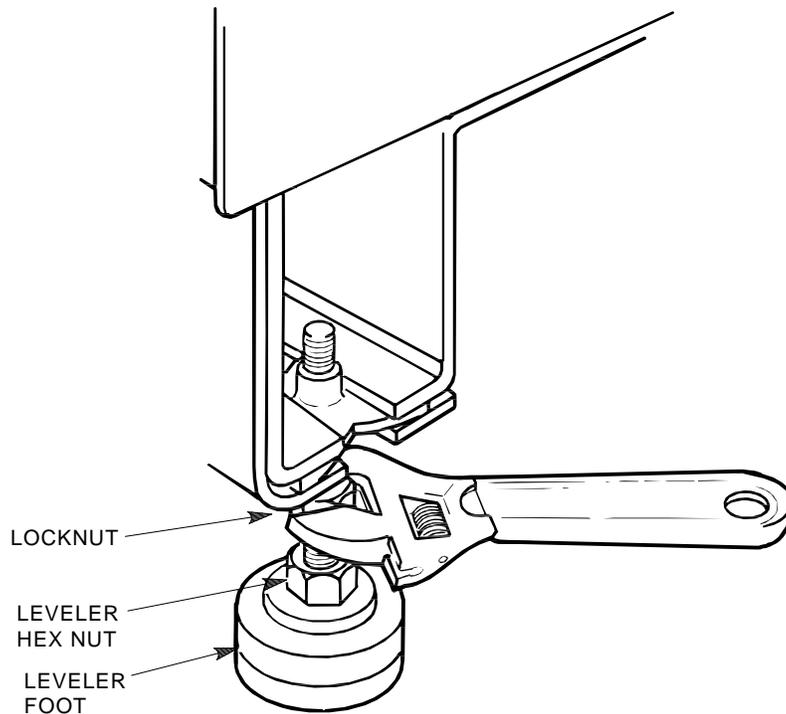
3.4 Leveling the DECarray Cabinet

3.4 Leveling the DECarray Cabinet

Once the array is in its final position:

1. Loosen the locknuts on all four leveler feet (Figure 3-7).
2. Turn each leveler hex nut clockwise until the leveler foot contacts the floor.
3. Adjust all four feet until the cabinet is level and the load is removed from all casters. Verify that the casters spin freely.
4. Tighten the locknuts on all four leveler feet (Figure 3-7).

Figure 3-7 Adjusting Leveler Feet



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Unpacking the DECarray
3.5 Inspecting the DECarray Cabinet

3.5 Inspecting the DECarray Cabinet

Inspect the DECarray cabinet first from the front, then from the rear.

1. Open the front and rear cabinet doors.
 - a. Turn the two hex-Allen fasteners at the right edge of each door counterclockwise to unlock them.
 - b. For each door, grasp the door by its edge, and pull toward you.
2. Verify that all operator control panels are correctly seated on each SF-series storage enclosure installed in the cabinet.

WARNING

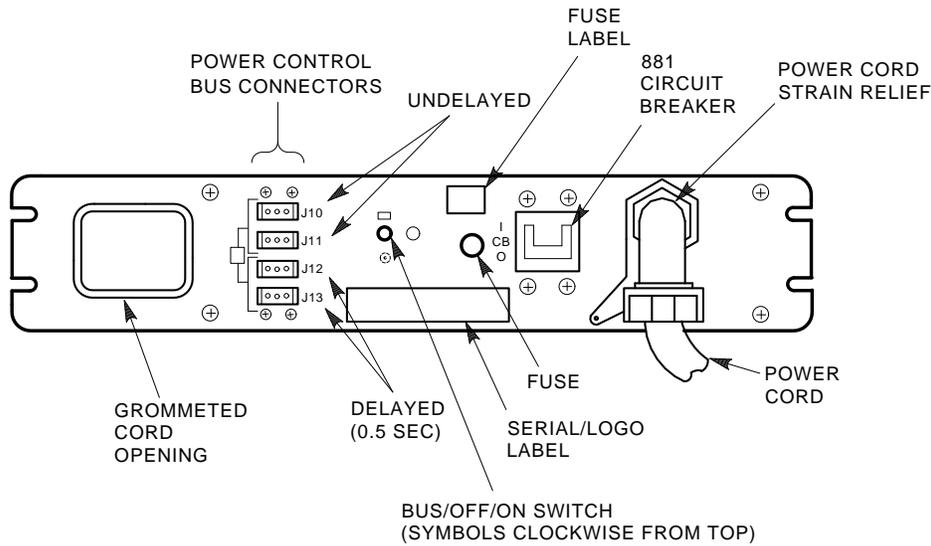
Adhere to electrostatic discharge (ESD) procedures at all times. Use the ESD straps available with every storage array.

3. At the rear of the DECarray cabinet, check the serial/logo label to verify that the correct voltage variation of the power controller exists to meet the power supplied to the installation site (Figure 3-8).
4. Ensure that all ac power cords going to the power controller from devices installed in the storage array are correctly seated in the power controller.
5. Ensure that the ac breaker is off (Figure 3-8).
6. Ensure that the bus switch of the power controller is in the on (down) position (Figure 3-8).

Unpacking the DECarray

3.5 Inspecting the DECarray Cabinet

Figure 3-8 Power Controller

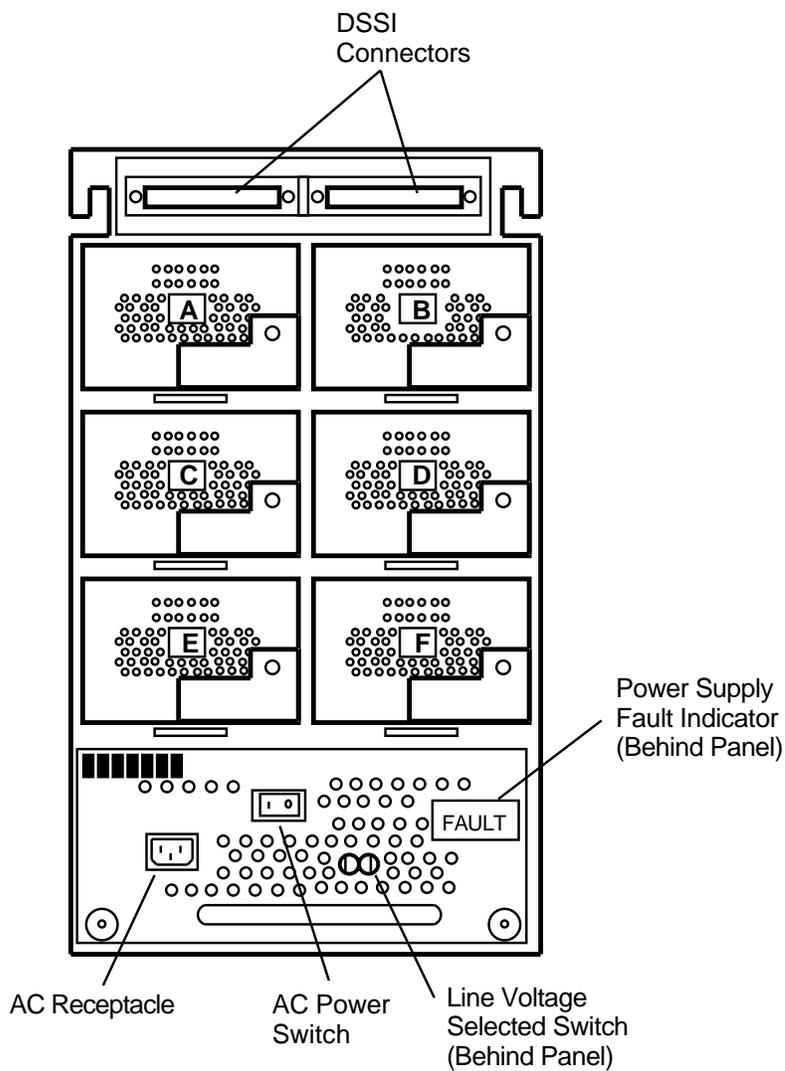


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7. Check the ac power cords for each storage enclosure and magazine tape installed. Make sure that each is correctly seated.
8. Make sure that the voltage selection switches for each storage enclosure and magazine tape are in the correct position for the power supplied by the installation site (Figures 3-9, 3-10, and 3-11).
9. Loosen the shipping screw on all magazine tapes in the storage array. This screw is in the right rear upper corner.
10. Make sure that all DSSI cables internal to the storage array are firmly seated.
11. Close the cabinet doors; turn the hex-Allen fasteners one quarter turn clockwise to lock them.

Unpacking the DECarray 3.5 Inspecting the DECarray Cabinet

Figure 3-9 SF3x Storage Enclosure Power Connection and Voltage Selection with Rear Cover Removed

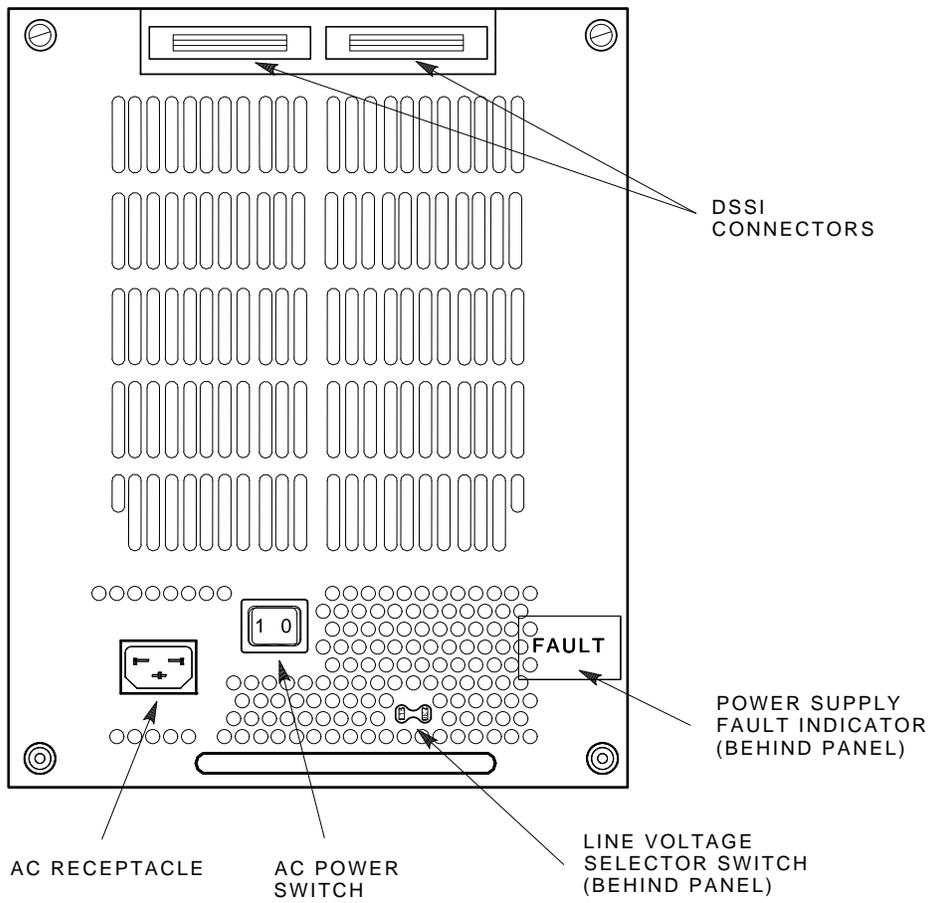


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Unpacking the DECarray

3.5 Inspecting the DECarray Cabinet

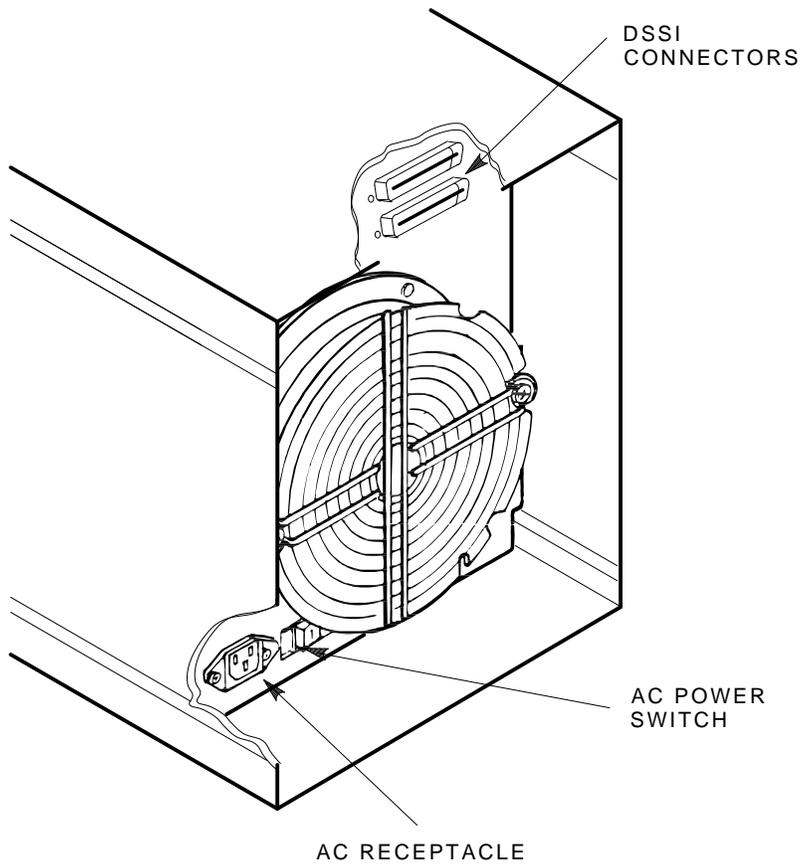
Figure 3-10 SF7x Storage Enclosure Power Connection and Voltage Selection



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Unpacking the DECarray 3.5 Inspecting the DECarray Cabinet

Figure 3-11 Magazine Tape Power Connection and Voltage Selection



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4

Installing a DECarray Cabinet

This chapter describes how to install the DECarray cabinet in a single-system or DSSI VAXcluster configuration.

Digital Services or trained installers must perform these procedures.

Make sure that all precautions for site preparation have been completed. Refer to Chapter 2.

Perform the installation only after you have completed all the steps in Chapter 3.

WARNING

Hazardous voltages are in the storage array and in the components of the storage array.

When performing any operation involving the power source, turn off the power controls of all components and on the power controller. Disconnect the power cable from the source outlet. Perform the operation, then reconnect the power cable to the source.

Installing a DECarray Cabinet

4.1 Configuration Overview

4.1 Configuration Overview

The DECarray cabinet is offered in a number of variants to provide storage capacity from 2 to 61.2 gigabytes. Additional SF-series storage enclosures and one or two TF-series magazine tape ISEs may also be added to each variant.

This section describes the variants that are supported in single-system, stripeset, and DSSI VAXcluster configurations.

4.1.1 Single-System Configurations

In a single-system configuration, one tape ISE and up to six disk ISEs can be connected to each DSSI bus. Tables 4-1 and 4-2 list the building blocks for single-system configurations using SF3x and SF7x storage enclosures, respectively.

For further information on single-system configurations, refer to the your system or DSSI adapter installation manual.

Installing a DECarray Cabinet 4.1 Configuration Overview

Table 4–1 Single-System Configurations using SF3x Enclosures

To support:	Your configuration must include:				Additional SF3x's	
Disk ISEs ¹	KFMSA Module(s)	System Cable Kits ²	DECarray Cable Kits ³	DECarray Variants	HK	JK
6	1	1	1	BA/BD		
12	1	1	2	CA/CD		
18	2	2	3	CA/CD	1	
24	2	2	4	FA/FD		
30	3	3	5	FA/FD	1	
36	3	3	6	HA/HD		
42	4	4	7	HA/HD	1	
48	4	4	8	HA/HD		1
54	5	5	9	HA/HD	1	1
60	5	5	10	HA/HD		2
66	6	6	11	HA/HD	1	2
72	6	6	12	JA/JD		

¹One or two TF800 series magazine tape ISEs may be added to any of the single-system DECarray configurations.

²Cable kit PN is CK-KFMSA-LJ for VAX 6000 systems, and CK-KFMSA-LK for VAX 9000 systems.

³Cable kit PN is CK-SF200-LM.

Installing a DECarray Cabinet

4.1 Configuration Overview

Table 4–2 Single-System Configurations using SF7x Enclosures

To support:	Your configuration must include:				Additional SF7x's	
Disk ISEs ¹	KFMSA Module(s)	System Cable Kits ²	DECarray Cable Kits ³	DECarray Variants	HK	JK
2	1	1	1	BA/BD		
4	1	1	1	CA/CD		
6	1	1	2	CA/CD	1	
8	1	1	2	FA/FD		
10	1	1	2	FA/FD	1	
12	1	1	2	HA/HD		
14	2	2	3	HA/HD	1	
16	2	2	3	HA/HD		1
18	2	2	4	HA/HD	1	1
20	2	2	4	HA/HD		2
22	2	2	4	HA/HD	1	2
24	2	2	4	JA/JD		

¹One or two TF800 series magazine tape ISEs may be added to any of the single-system DECarray configurations.

²Cable kit PN is CK-KFMSA-LJ for VAX 6000 systems, and CK-KFMSA-LK for VAX 9000 systems.

³Cable kit PN is CK-SF200-LM.

Installing a DECarray Cabinet

4.1 Configuration Overview

4.1.2 DSSI VAXcluster Configurations

A DSSI VAXcluster configuration is one where the ISEs in the DECarray cabinet are connected with two or three DSSI adapters on a single DSSI bus.

Tables 4–3 and 4–4 list the building blocks for DSSI VAXcluster configurations using the SF3x and SF7x storage enclosures.

For further information on DSSI VAXcluster configurations, refer to your system or DSSI adapter installation manual.

Table 4–3 DSSI VAXcluster Configurations Using SF3x Enclosures (two-host)

To support:	Your configuration must include:				Additional SF3x's	
Disk ISEs ¹	Minimum KFMSA Module(s)	System Cable Kits ²	DECarray Cable Kits ³	DECarray Variants	HK	JK
6	2	2	2	BA/BD		
12	2	2	4	CA/CD		
18	3	3	6	CA/CD	1	
24	3	3	8	FA/FD		
30	4	4	10	FA/FD	1	
36	4	4	12	HA/HD		
42	5	5	14	HA/HD	1	
48	5	5	16	HA/HD		1
54	6	6	18	HA/HD	1	1
60	6	6	20	HA/HD		2
66	7	7	22	HA/HD	1	2
72	7	7	24	JA/JD		

¹One or two TF800 series magazine tape ISEs may be added to any of the DSSI VAXcluster DECarray configurations.

²Cable kit PN is CK–KFMSA–LJ for VAX 6000 systems, and CK–KFMSA–LK for VAX 9000 systems.

³Cable kit PN is CK–SF200–LM.

Installing a DECarray Cabinet

4.1 Configuration Overview

Table 4–4 DSSI VAXcluster Configurations Using SF3x Enclosures (three-host)

To support: Disk ISEs ¹	Your configuration must include:				Additional SF3x's	
	Minimum KFMSA Module(s)	System Cable Kits ²	DECarray Cable Kits ³	DECarray Variants	HK	JK
5	3	3	3	BA/BD		
10	3	3	6	CA/CD		
15	6	6	9	CA/CD	1	
20	6	6	12	FA/FD		
25	9	9	15	FA/FD	1	
30	9	9	18	HA/HD		
35	12	12	21	HA/HD	1	
40	12	12	24	HA/HD		1
45	15	15	27	HA/HD	1	1
50	15	15	30	HA/HD		2
55	18	18	33	HA/HD	1	2
60	18	18	36	JA/JD		

¹One or two TF800 series magazine tape ISEs may be added to any of the DSSI VAXcluster DECarray configurations.

²Cable kit PN is CK-KFMSA-LJ for VAX 6000 systems, and CK-KFMSA-LK for VAX 9000 systems.

³Cable kit PN is CK-SF200-LM.

Installing a DECarray Cabinet 4.1 Configuration Overview

Table 4–5 DSSI VAXcluster Configurations Using SF7x Enclosures (two-host)

To support:	Your configuration must include:				Additional SF7x's	
Disk ISEs ¹	KFMSA Module(s)	System Cable Kits ²	DECarray Cable Kits ³	DECarray Variants	HK	JK
6	2	2	2	BE/BH		
12	2	2	2	CE/CH		
18	2	2	4	CE/CH	1	
24	2	2	4	FE/FH		
30	2	2	4	FE/FH	1	
36	2	2	4	HE/HH		
42	4	4	6	HE/HH	1	
48	4	4	6	HE/HH		1
54	4	4	8	HE/HH	1	1
60	4	4	8	HE/HH		2
66	4	4	8	HE/HH	1	2
72	4	4	8	JE/JH		

¹One or two TF800 series magazine tape ISEs may be added to any of the DSSI VAXcluster DECarray configurations.

²Cable kit PN is CK-KFMSA-LJ for VAX 6000 systems, and CK-KFMSA-LK for VAX 9000 systems.

³Cable kit PN is CK-SF200-LM.

Installing a DECarray Cabinet

4.1 Configuration Overview

Table 4–6 DSSI VAXcluster Configurations Using SF7x Enclosures (three-host)

To support: Disk ISEs ¹	Your configuration must include:				Additional SF7x's	
	KFMSA Module(s)	System Cable Kits ²	DECarray Cable Kits ³	DECarray Variants	HK	JK
6	3	3	3	BE/BH		
12	3	3	3	CE/CH		
18	3	3	6	CE/CH	1	
24	3	3	6	FE/FH		
30	3	3	6	FE/FH	1	
36	3	3	6	HE/HH		
42	6	6	9	HE/HH	1	
48	6	6	9	HE/HH		1
54	6	6	12	HE/HH	1	1
60	6	6	12	HE/HH		2
66	6	6	12	HE/HH	1	2
72	6	6	12	JE/JH		

¹One or two TF800 series magazine tape ISEs may be added to any of the DSSI VAXcluster DECarray configurations.

²Cable kit PN is CK-KFMSA-LJ for VAX 6000 systems, and CK-KFMSA-LK for VAX 9000 systems.

³Cable kit PN is CK-SF200-LM.

Installing a DECarray Cabinet

4.1 Configuration Overview

4.1.3 Stripese Configuration

A stripeset configuration is one where the DSSI ISEs are configured to act as a single, *virtual* disk with increased I/O performance. In a stripeset configuration, storage enclosures are configured in split-bus mode. One or both tape ISEs must be connected to a separate DSSI adapter port. Tables 4–7 and 4–8 list the building blocks for each stripeset configuration.

Table 4–7 Stripese Configurations Using SF3x Enclosures

To support:	Your configuration must include:				Additional SF3x's	
Disk ISEs ¹	KFMSA Modules	System Cable Kits ²	DECarray Cable Kits ³	DECarray Variants	HK	JK
6	1	2	2	BA/BD		
12	2	4	4	CA/CD		
18	3	6	6	CA/CD	1	
24	4	8	8	FA/FD		
30	5	10	10	FA/FD	1	
36	6	12	12	HA/HD		
42	7	14	14	HA/HD	1	
48	8	16	16	HA/HD		1

¹One or two TF800 series magazine tape ISEs may be added to any of the stripeset DECarray configurations.

²Cable kit PN is CK–KFMSA–LJ for VAX 6000 systems, and CK–KFMSA–LK for VAX 9000 systems.

³Cable kit PN is CK–SF200–LM.

Installing a DECarray Cabinet

4.1 Configuration Overview

Table 4–8 Stripeset Configurations Using SF7x Enclosures

To support:		Your configuration must include:				
Disk ISEs ¹	Data Transfer Rate (MB/sec)	KFMSA Modules	System Cable Kits ²	DECarray Cable Kits ³	DECarray Variants	SF7x JK(s)
8	10	2	2	4	FE/FH	
12	15	3	3	6	HE/HH	
16	20	4	4	8	HE/HH	1
20	25	5	5	10	HE/HH	2
24	30	6	6	12	JE/JH	

¹One or two TF800 series magazine tape ISEs may be added to any of the stripeset DECarray configurations.

²Cable kit PN is CK–KFMSA–LJ for VAX 6000 systems, and CK–KFMSA–LK for VAX 9000 systems.

³Cable kit PN is CK–SF200–LM.

Installing a DECarray Cabinet

4.2 Inspecting the DECarray Cabinet

4.2 Inspecting the DECarray Cabinet

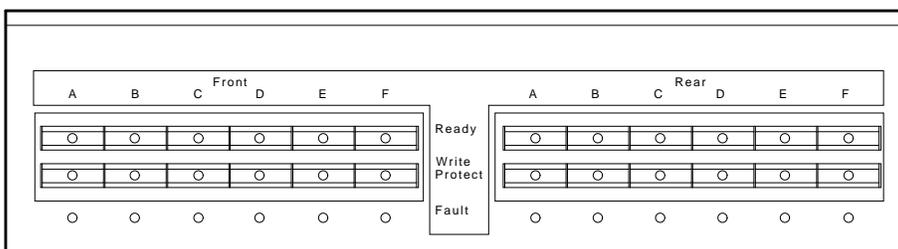
Before beginning the configuration, inspect the DECarray cabinet from the front, then from the rear.

1. Open the front and rear cabinet doors.
 - a. Turn the two 3/16-inch hex-Allen fasteners at the right edge of the door counterclockwise to unlock them.
 - b. For each door, grasp the door by its edges, and pull toward you.
2. Check the settings on the OCP of each storage enclosure, located at the front of the DECarray cabinet (Figures 4-1 and 4-2).

For SF3x Enclosures:

- a. Make sure the Ready and Write Protect switches are in the out position.
- b. Make sure the MSCP/Fault LED is unlit.
- c. Make sure the dc power switch for each ISE in the enclosure is off.

Figure 4-1 SF3x Operator Control Panel



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Installing a DECarray Cabinet

4.2 Inspecting the DECarray Cabinet

For SF7x Enclosures:

- a. Open the door in the center of each OCP and verify the correct setting for the DSSI node ID switches. These are the three right-most switches for each of the four ISEs in the enclosure.

Make sure that each ISE has a unique DSSI node ID for the DSSI bus that it is on. By convention, DSSI node ID 0 is used for a tape ISE. Disk ISEs should start with DSSI node ID 1 and sequence up from there.

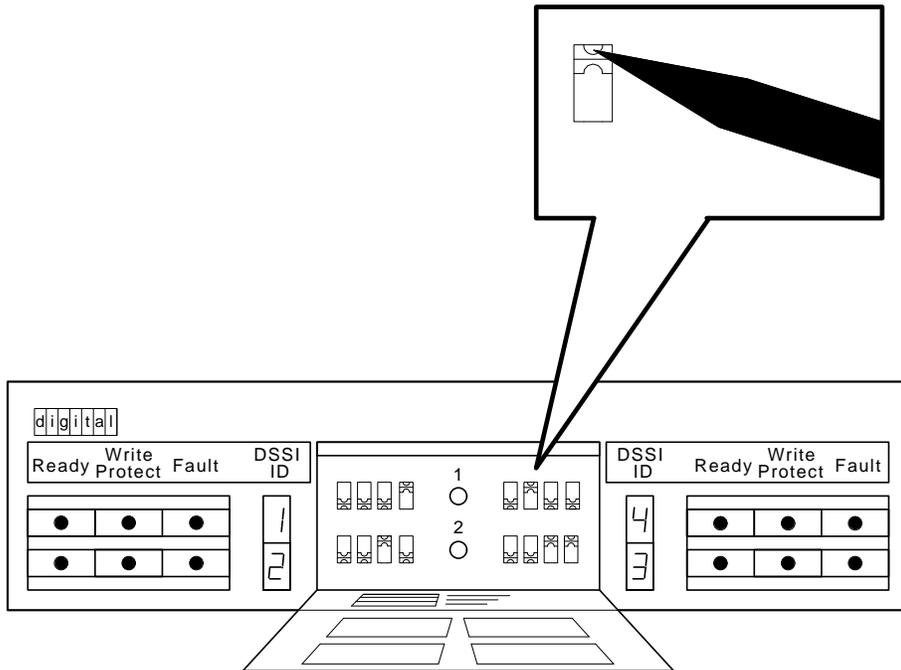
- b. The left-most switch (MSCP) should be in the down (enabled) position for each ISE in the enclosure.
- c. Make sure that all OCP buttons are in the out position.
- d. Make sure that the OCP itself is correctly seated in the SF7x enclosure. To do so, place a thumb on either side of the OCP and press in.
- e. Ensure that all drive dc power switches (lower half of the enclosure) are in the out position.

WARNING

Adhere to electrostatic discharge (ESD) procedures at all times. Use the ESD straps available with every storage array.

Installing a DECarray Cabinet 4.2 Inspecting the DECarray Cabinet

Figure 4-2 SF7x Operator Control Panel



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Installing a DECarray Cabinet

4.2 Inspecting the DECarray Cabinet

3. Make sure that the DSSI node ID numbers of each magazine tape ISE installed in the array are set to 0 and that the TMSCP switch is enabled (down). Refer to the magazine tape ISE documentation for the procedure to access the DSSI controller module.
4. At the rear of the DECarray:
 - a. Check that the correct variation of the power controller exists to meet the power supplied to the installation site.
 - b. Make sure that all ac power cords going to the power controller from devices installed in the storage array are correctly seated in the power controller.
 - c. Make sure that the ac breaker is off (Figure 4-3).
 - d. Make sure that the bus switch of the power controller is in the *on* (down) position (Figure 4-3). Make sure that the BUS/OFF/ON switch is in the down position.

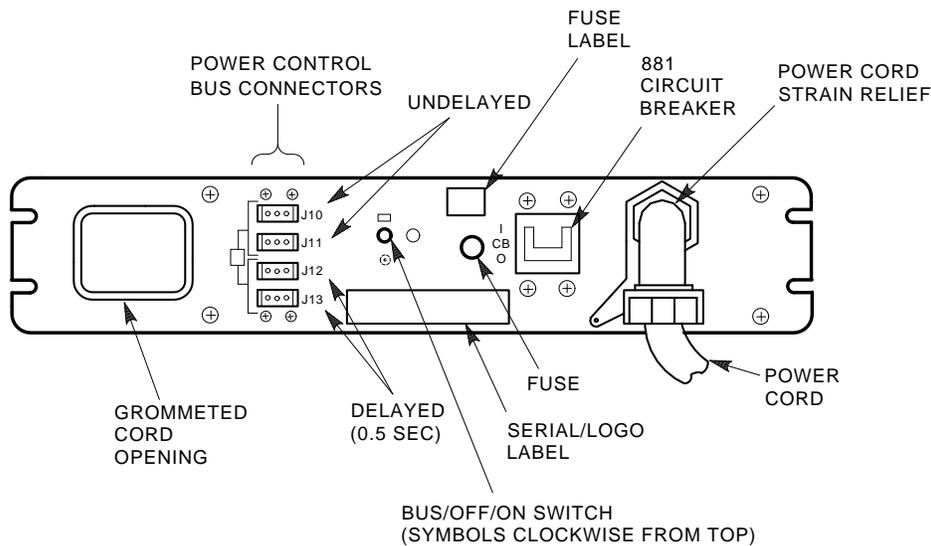
CAUTION

Make sure that all ac power switches on each storage enclosure and magazine tape ISE(s) are in the off position.

Installing a DECarray Cabinet

4.2 Inspecting the DECarray Cabinet

Figure 4-3 Power Controller



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5. For each storage enclosure and magazine tape ISE installed, check that the ac power cord is correctly seated.
6. Make sure that each storage enclosure and magazine tape ISE has the correct voltage selected for the power supplied to the power controller. Note that each has a voltage label for its factory setting.
7. Make sure that the voltage selection switches for each storage enclosure and magazine tape ISE are in the correct position for the power supplied on the power controller.
8. Make sure that the shipping screw on all magazine tape ISEs has been loosened. This screw is in the rear upper right corner of the magazine tape ISE. Loosen the screw; do not remove it.
9. Make sure that all DSSI connectors on the DECarray I/O panel are firmly seated.

Installing a DECarray Cabinet

4.3 Installing the DECarray Cabinet in a Single-System Configuration

4.3 Installing the DECarray Cabinet in a Single-System Configuration

This section describes the procedures for installing the DECarray cabinet in a single-system configuration.

Make sure that all precautions for site preparation have been completed. Refer to Chapter 2.

The procedures provide the steps to:

- Cable the DECarray cabinet to the system in the single-system configuration (Section 4.3.1)
- Fill out the configuration worksheet (Section 4.3.2)
- Attach labels to DSSI cables and ISEs (Section 4.3.3)
- Power up the DECarray after successfully installing (Section 4.3.4)
- Check the DECarray for correct operation (Section 4.3.5)

4.3.1 Cabling the DECarray Cabinet

Start at the rear of the DECarray cabinet.

1. Plug the main power cable of the storage array into its power receptacle.

WARNING

Hazardous voltages are in the storage array and in the components of the storage array.

When performing any operation involving the power source, turn off the power controls of all components and on the power controller. Disconnect the power cable from the source outlet. Perform the operation, then reconnect the power cable to the source.

2. Connect the 108-inch DSSI cable or cables (PN BC21Q-09) from the DECarray DSSI I/O panel to the system I/O panel.
 - a. At the system I/O panel, remove the terminator or terminators (PN 12-31281-01). See Figure 4-4. Store these terminators in the ESD pouch on the rear door of the storage array cabinet.

Installing a DECarray Cabinet

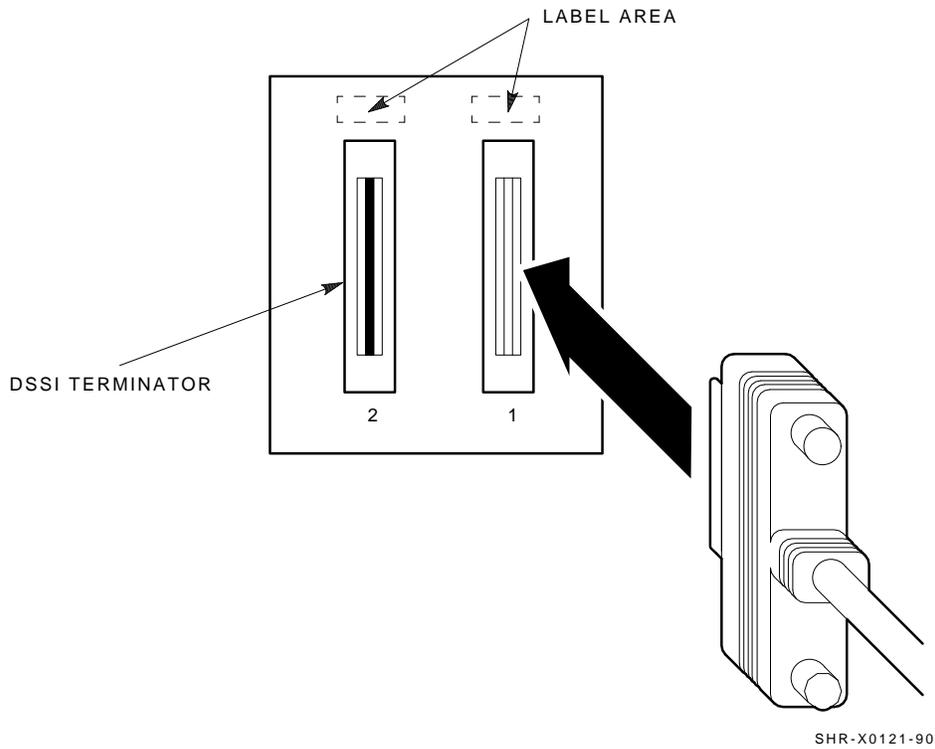
4.3 Installing the DECarray Cabinet in a Single-System Configuration

- b. To determine which of the two DSSI connectors on the system I/O panel to connect to:
 - Open the system I/O panel by removing the screws that secure it to the system chassis. Let the panel swing down to its resting position.
 - Find the first KFMSA module installed in the system XMI backplane. It is the KFMSA module in the lowest numbered slot of the KFMSA modules installed.
 - Follow the cabling from the backplane to the system I/O panel.
 - While viewing the front of the I/O panel, note that the DSSI connector on the right is KFMSA DSSI bus 1 and on the left is bus 2.
 - For ports 1 and 3 on the DECarray I/O panel, connect the 108-inch DSSI cable to the right DSSI connector of the system I/O panel.
 - For ports 2 and 4 on the DECarray I/O panel, connect the 108-inch DSSI cable to the left DSSI connector of the system I/O panel.
- c. Install one end of the 108-inch DSSI cable (PN BC21Q-09) to one of the ports on I/O panel at the bottom rear of the system cabinet (Figure 4-4).
 - Connect the DSSI cable from the DSSI port 1 (of the I/O panel) to the first DSSI connector of the first KFMSA bulkhead connector on the system I/O panel.
 - Connect the DSSI cable from the DSSI port 2 (of the I/O panel) to the second DSSI connector of the first KFMSA bulkhead connector on the system I/O panel.
 - Connect the DSSI cable from the DSSI port 3 (of the I/O panel) to the first DSSI connector of the second KFMSA bulkhead connector on the system I/O panel.
 - Connect the DSSI cable from the DSSI port 4 (of the I/O panel) to the second DSSI connector of the second KFMSA bulkhead connector on the system I/O panel.

Installing a DECarray Cabinet

4.3 Installing the DECarray Cabinet in a Single-System Configuration

Figure 4-4 Removing Terminators and Connecting DSSI Cables at the System I/O Panel



Installing a DECarray Cabinet

4.3 Installing the DECarray Cabinet in a Single-System Configuration

3. Install the terminator or terminators (PN 12-31281-01) to their correct position on the storage enclosures, magazine tape ISEs, and system I/O panel.

Note that the positions are numbered on the cabinet frame side rails on the front and the rear of the cabinet.

- If the array has a storage enclosure in position 1 and a magazine tape ISE in positions 5 and 6, install a terminator (PN 12-31281-01) in the bottom DSSI connector of the magazine tape ISE in position 6.
- If the array has two magazine tape ISEs in positions 5 and 6, install a terminator (PN 12-31281-01) in the bottom DSSI connector of both magazine tape ISEs.
- If the array has a storage enclosure in position 1 only, install a terminator (PN 12-31281-01) in the leftmost DSSI connector of position 1 and the unused DSSI connector on the system I/O panel.
- If the array has a storage enclosure in position 1 and 2, install a terminator (PN 12-31281-01) in the leftmost DSSI connectors of position 1 and 2.
- If the array has a storage enclosure in position 1, 2, 3, 4, and 7, install a terminator (PN 12-31281-01) in the leftmost DSSI connectors of positions 4 and 7, and the unused DSSI connector on the system I/O panel.
- If the array has a storage enclosure in position 1, 2, 3, 4, 7, and 8, install a terminator (PN 12-31281-01) in the leftmost DSSI connectors of position 4 and 7.

All other configurations, with or without magazine tape ISEs, do not need terminators.

Installing a DECarray Cabinet

4.3 Installing the DECarray Cabinet in a Single-System Configuration

4.3.2 Completing the System Configuration Sheet

Fill out the system configuration sheet. Blank configuration worksheets are provided in Appendix E of this manual.

Note

Do not attempt to fill out and place the labels until you have completed the system configuration sheet.

The information from the system configuration sheet is used to fill out the labels correctly for all DSSI cables, enclosure OCPs, and magazine tape ISEs.

Refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out the labels.

4.3.3 Labeling the Cables

This section describes how to correctly label the cables for the system, the DECarray cabinet, and the storage enclosures and magazine tape ISEs.

At this point, all steps in the previous sections must be complete.

Digital Services or trained installers must perform the steps that follow.

Installing a DECarray Cabinet

4.3 Installing the DECarray Cabinet in a Single-System Configuration

4.3.3.1 Filling Out the Labels

The labels are available in two sizes; the larger one for the DSSI cables, and the smaller one for the storage enclosure and the system I/O panel.

Refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out the labels.

For a single-system configuration, use the following colored labels:

Label Color	I/O Port	SF7x Position	SF3x Position
Blue	1	5, 1, 3	2 Rear
Red	2	6, 2, 3	2 Front
Yellow	3	4, 8	4 Rear
Green	4	7, 8	4 Front
Blue & white	5		8 Rear
Red & white	6		8 Front
Yellow & white	7		
Green & white	8		
Blue, red	9		1 Rear
Yellow, green	10		1 Front
Blue, red & white	11		3 Rear
Yellow, green & white	12		3 Front
Blue, blue & white	13		7 Rear
Yellow, yellow & white	14		7 Rear
Blue & white, red & white	15		
Yellow & white, green & white	16		

Installing a DECarray Cabinet

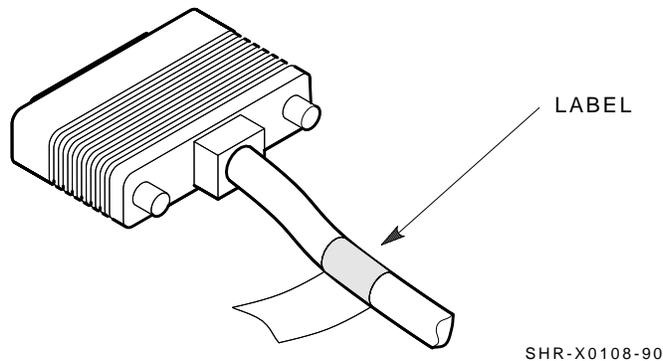
4.3 Installing the DECarray Cabinet in a Single-System Configuration

4.3.3.2 Positioning the Labels

Once the labels have been filled out, place them on the DSSI cables and the storage enclosures. Also place a label on the front of the magazine tape ISE.

On the DSSI cable, place the label about four inches behind the DSSI connector (Figure 4-5).

Figure 4-5 Placing a Label on a DSSI Cable



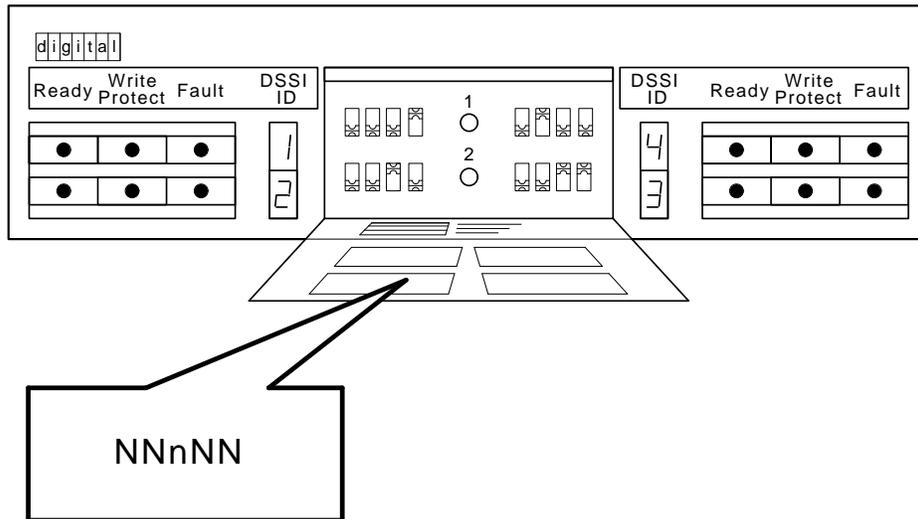
Installing a DECarray Cabinet

4.3 Installing the DECarray Cabinet in a Single-System Configuration

Place the SF7x OCP label as shown in Figure 4-6. The SF3x OCP does not have a place to fix a label.

Place the magazine tape ISE label as shown in Figure 4-7.

Figure 4-6 Placing a Label on the SF7x Storage Enclosure

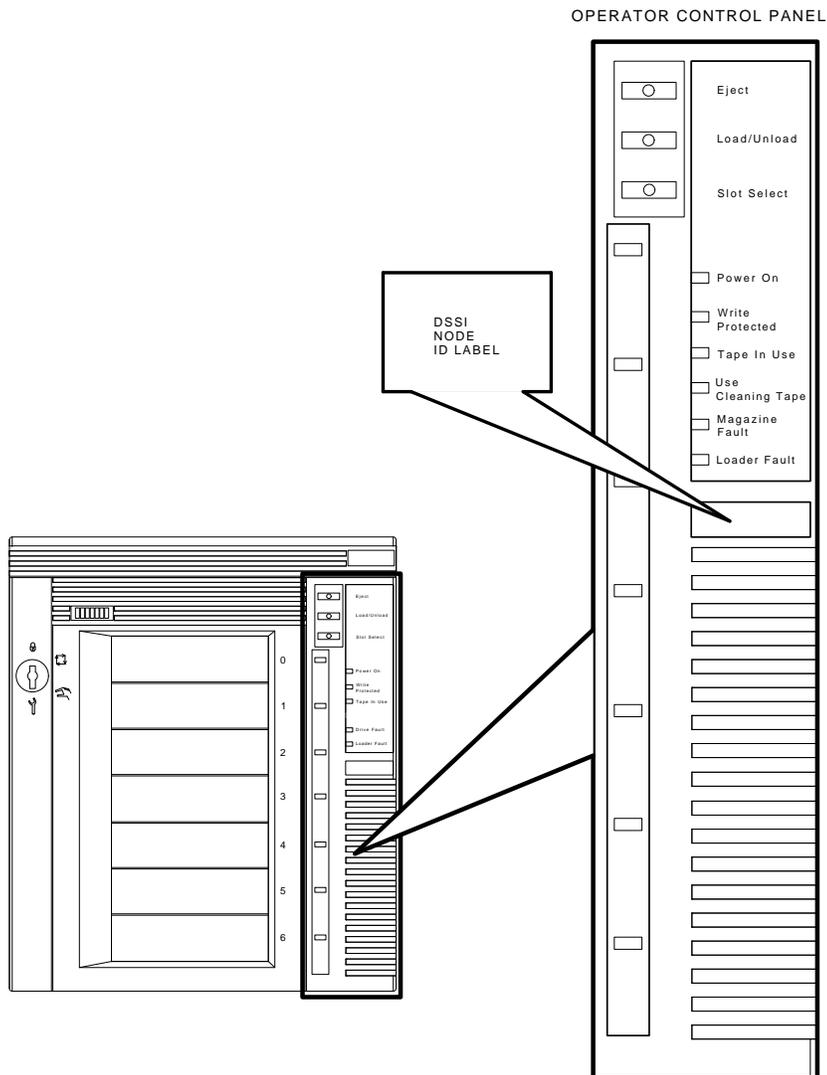


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Installing a DECarray Cabinet

4.3 Installing the DECarray Cabinet in a Single-System Configuration

Figure 4-7 Placing a Label on the Magazine Tape ISE



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Installing a DECarray Cabinet

4.3 Installing the DECarray Cabinet in a Single-System Configuration

4.3.4 Powering Up the DECarray Cabinet

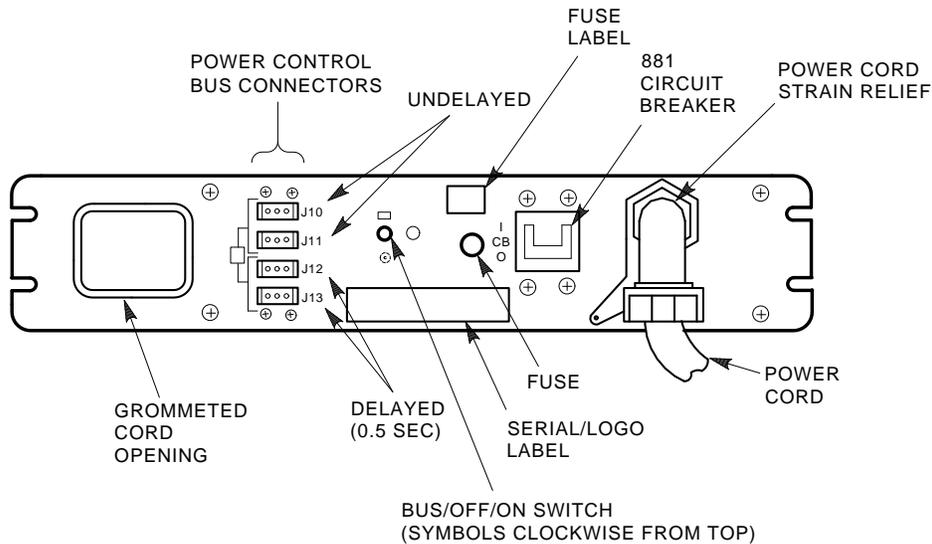
Once the DECarray cabinet has been installed and labeled, you are ready to apply power. Follow the steps in order.

CAUTION

Make sure that the ac power switch on each storage enclosure and magazine tape ISE installed is in the off position.

1. At the rear of the DECarray cabinet, turn the power controller on (Figure 4-8). Make sure that the BUS/OFF/ON switch is in the down position.

Figure 4-8 Power Controller Circuit Breaker



SHR-X0107-90

Installing a DECarray Cabinet

4.3 Installing the DECarray Cabinet in a Single-System Configuration

2. Apply power to each magazine tape ISE installed. Power up the unit in position 5 first, then the one in position 6. Observe the front panel. If a failure occurs, refer to Chapter 9.
3. Apply power to each storage enclosure, starting with position 1 and continuing in numerical order.
4. Press the dc power switch for each ISE in each storage enclosure. Start with position 1 and continue in numerical order. If the Fault indicator lights for any disk ISE, refer to Chapter 9.
5. Observe the OCP indicators.

For SF3x Storage Enclosures:

- a. Check that all dc power buttons are lit for all ISEs installed in the rear of the storage enclosure. After about 15 seconds after power is applied, the buttons flicker, indicating power-on self-tests.
- b. Check that all dc power buttons are lit for all ISEs installed in the front of the storage enclosure. Power is applied to the front ISEs approximately 30 seconds after the rear ISEs. About 15 seconds after power is applied, the buttons flicker, indicating power-on self-tests.
- c. Check that all Fault indicators on the OCP are off. If a Fault indicator is lit green or amber, press the switch. If a Fault indicator is lit red, this indicates a faulty ISE.

For SF7x Storage Enclosures:

- a. Check that the TERM PWR indicator (behind the door of the OCP) is on for all positions installed.
 - b. Check that the SPLIT indicator (behind the door of the OCP) is on for positions 3 and 8 only.
6. Press the Ready button on the OCP. The Ready indicator flickers, then lights steadily green once the ISE is on-line.

4.3 Installing the DECarray Cabinet in a Single-System Configuration

4.3.5 Single-System Final Verification

Once the hardware installation, cabling and labeling, and the powering up steps are complete, you are ready to configure the DSSI subsystem and verify the correct operation of each ISE in the array with the system.

Refer to the *KFMSA Module Installation and User Manual* for detailed information on the correct operation of each ISE. This manual contains procedures for establishing the communications between the ISEs, the adapter module, and the system. It also contains step-by-step procedures for reconfiguring the system with its newly installed DSSI devices.

Refer to the manuals for the disk ISE and tape ISE for detailed information on the local programs in the ISEs.

If at any time you detect a failure, refer to Chapter 9.

Once the verification is complete, close the cabinet doors; turn the hex-Allen fasteners one quarter turn clockwise to lock them. The system is ready to be turned over to the system manager.

Installing a DECarray Cabinet

4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

This section describes how to install the DECarray cabinet in a DSSI VAXcluster configuration.

Make sure that all precautions for site preparation have been completed. Refer to Chapter 2.

Follow these steps:

- Cable the DECarray cabinet to the systems in the DSSI VAXcluster configuration (Section 4.4.1)
- Fill out the configuration worksheet (Section 4.4.2.1)
- Attach labels to DSSI cables and ISEs (Section 4.4.2)
- Power up the DECarray after successfully installing (Section 4.4.3)
- Check the DECarray for correct operation (Section 4.4.4)

4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

4.4.1 Cabling the DECarray Cabinet

Start at the rear of the DECarray cabinet.

1. Plug the main power cable of the DECarray into its power receptacle.

WARNING

Hazardous voltages are in the DECarray and in the components of the storage array.

When performing any operation involving the power source, turn off the power controls of all components and on the power controller. Disconnect the power cable from the source outlet. Perform the operation, then reconnect the power cable to the source.

2. Connect the 108-inch DSSI cable or cables (PN BC21Q-09) from the array DSSI I/O panel to the system I/O panel.
 - a. At the system I/O panel, remove the terminator or terminators (PN 12-31281-01). See Figure 4-9. Store these terminators in the ESD pouch on the rear door of the storage array cabinet.
 - b. To determine which of the two DSSI connectors on the system I/O panel to connect to:
 - Open the system I/O panel by removing the screws that secure it to the system chassis. Let the panel swing down to its resting position.
 - Find the first KFMSA module installed in the system XMI backplane. It is the KFMSA module in the lowest numbered slot of the KFMSA modules installed.
 - Follow the cabling from the backplane to the system I/O panel.
 - While viewing the front of the I/O panel, note that the DSSI connector on the right is KFMSA DSSI bus 1 and on the left is bus 2.
 - For ports 1, 3, and 5 on the DECarray I/O panel, connect the 108-inch DSSI cable to the right DSSI connector of the system I/O panel.
 - For ports 2, 4, and 6 on the DECarray I/O panel, connect the 108-inch DSSI cable to the left DSSI connector of the system I/O panel.

Installing a DECarray Cabinet

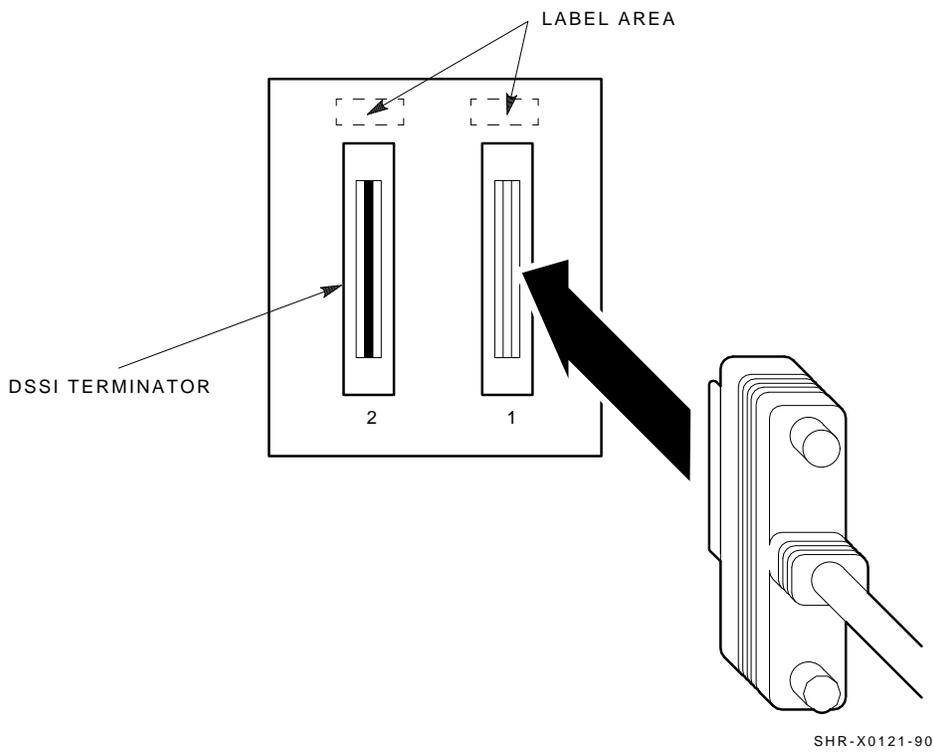
4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

- c. Install one end of the 108-inch DSSI cable (PN BC21Q-09) to the I/O panel on the system cabinet (Figure 4-9).
 - Connect the DSSI cable from the DSSI port 1 (of the I/O panel) to the first DSSI connector of the first KFMSA bulkhead connector on the system I/O panel.
 - Connect the DSSI cable from the DSSI port 2 (of the I/O panel) to the second DSSI connector of the first KFMSA bulkhead connector on the system I/O panel.
 - Connect the DSSI cable from the DSSI port 3 (of the I/O panel) to the first DSSI connector of the second KFMSA bulkhead connector on the system I/O panel.
 - Connect the DSSI cable from the DSSI port 4 (of the I/O panel) to the second DSSI connector of the second KFMSA bulkhead connector on the system I/O panel.
 - Connect the DSSI cable from the DSSI port 5 (of the I/O panel) to the first DSSI connector of the third KFMSA bulkhead connector on the system I/O panel.
 - Connect the DSSI cable from the DSSI port 6 (of the I/O panel) to the second DSSI connector of the third KFMSA bulkhead connector on the system I/O panel.

Note that DECarray I/O panel DSSI ports 7, 8, 15, and 16 are not used.

Installing a DECarray Cabinet 4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

Figure 4-9 Removing Terminators and Connecting DSSI Cables at the System I/O Panel



Installing a DECarray Cabinet

4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

4.4.2 Labeling the Cables

This section describes how to correctly label the cables for the systems, the DECarray cabinet, and the SF7x storage enclosures and magazine tape ISEs.

At this point, all steps in the previous sections must be complete.

Digital Services or trained installers must perform the steps that follow.

4.4.2.1 Completing the System Configuration Sheet

Fill out the system configuration sheet. Blank configuration worksheets are provided in Appendix E and in the *KFMSA Module Installation and User Manual*.

Note

Do not attempt to fill out and place the labels until you have completed the system configuration sheet.

The information from the system configuration sheet is used to fill out the labels correctly for all DSSI cables, enclosure OCPs, and magazine tape ISEs.

Refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out these labels.

Installing a DECarray Cabinet

4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

4.4.2.2 Filling Out the Labels

The labels are available in two sizes: the larger one for the DSSI cables, and the smaller one for the inside of the SF7x OCP door¹ and the system I/O panel.

Refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out these labels.

For the DSSI VAXcluster configuration, the following colored labels are to be used on the SF7x OCP door, the front panel of the magazine tape ISE, and all DSSI cables.

Label Color	I/O Ports for ...	SF7x Position	I/O Port for ...	SF3x Position
Blue	1,9	5, 1	1	2 Rear
Red	2,10	6, 2	2	2 Front
Yellow	3,11	4, 8	3	4 Rear
Green	4,12	7, 8	4	4 Front
Blue & white	5,13	7	5	8 Rear
Red & white	6,14	8	6	8 Front
Yellow & white			7	
Green & white			8	
Blue, red			9	1 Rear
Yellow, green			10	1 Front
Blue, red & white			11	3 Rear
Yellow, green & white			12	3 Front
Blue, blue & white			13	7 Rear
Yellow, yellow & white			14	7 Rear
Blue & white, red & white			15	
Yellow & white, green & white			16	

¹ The SF3x OCP does not have a place for labels.

Installing a DECarray Cabinet

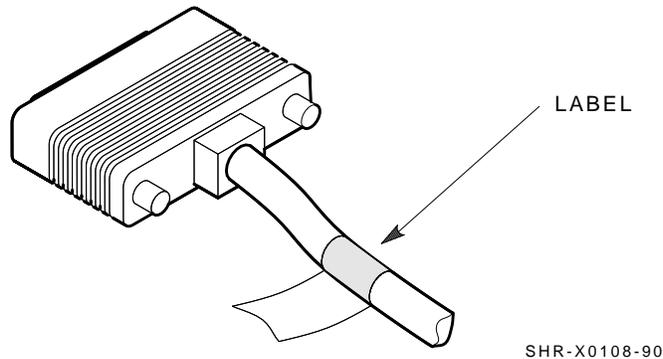
4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

4.4.2.3 Positioning the Labels

Once the labels have been filled out, place the labels on the DSSI cables and the SF7x OCP doors. Also place a label on the front of the magazine tape ISE.

On the DSSI cable, place the label four inches behind the DSSI connector (Figure 4-10).

Figure 4-10 Placing a Label on a DSSI Cable



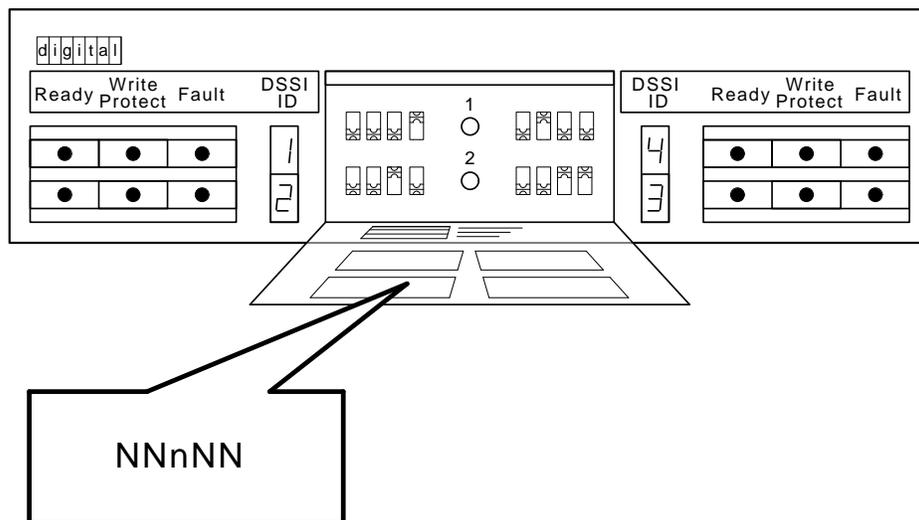
Installing a DECarray Cabinet

4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

Place the SF7x OCP label as shown in Figure 4-11 and the magazine tape ISE label as shown in Figure 4-12. The SF3x OCP does not have a place for a label.

Place the magazine tape ISE label as shown in Figure 4-12.

Figure 4-11 Placing a Label on the OCP Door

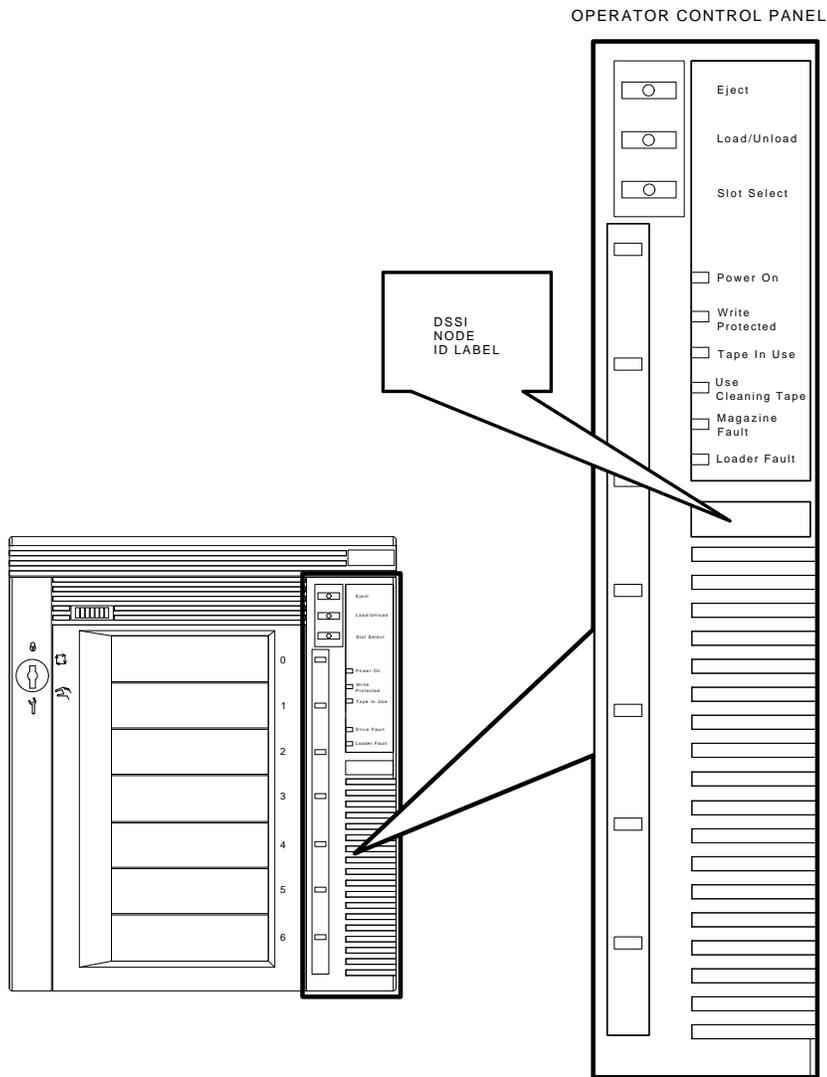


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Installing a DECarray Cabinet

4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

Figure 4-12 Placing a Label on the Magazine Tape ISE



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Installing a DECarray Cabinet

4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

4.4.3 Powering Up the DECarray

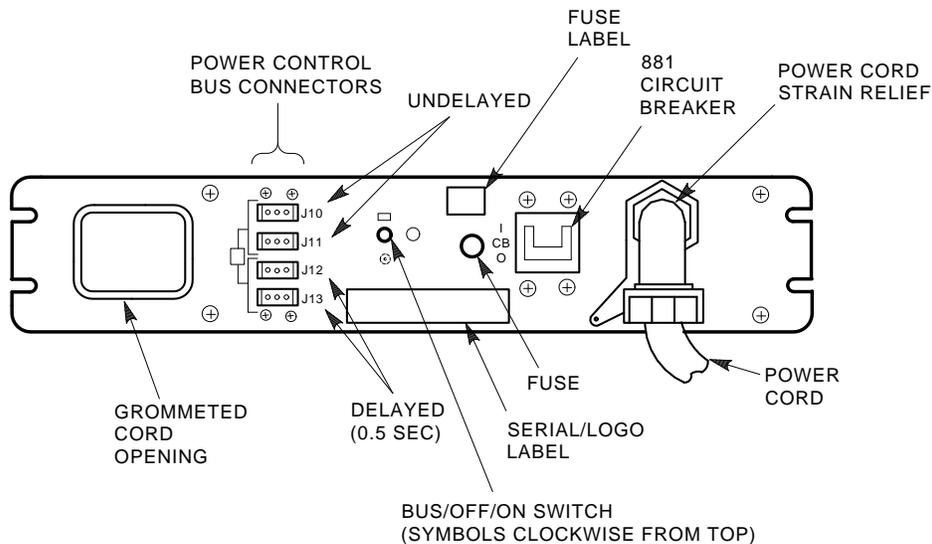
Once the DECarray has been installed and labeled, you are ready to apply power. Follow the steps in order.

CAUTION

Make sure that the ac power switch on each SF7x storage enclosure and magazine tape ISE installed is in the off position.

1. At the rear of the storage array, turn the power controller on (Figure 4-13). Make sure that the BUS/OFF/ON switch is in the down position.

Figure 4-13 Power Controller Circuit Breaker



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Installing a DECarray Cabinet

4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

2. Apply power to the magazine tape ISE installed in position 5 (if present). Then apply power to the magazine take ISE installed in position 6 (if present). Observe the front panel. If a failure occurs, refer to Chapter 9.
3. Apply power to each storage enclosure in the DECarray, starting with position 1 and continuing in numerical order.
4. Press the dc power switches for all ISEs in each storage enclosure. Start with the storage enclosure in position 1 and continue in numerical order. If the Fault indicator lights for any disk ISE, refer to Chapter 9.
5. Observe the OCP indicators.

For SF3x Storage Enclosures:

- a. Check that all dc power buttons are lit for all ISEs installed in the rear of the storage enclosure. After about 15 seconds after power is applied, the buttons flicker, indicating power-on self-tests.
- b. Check that all dc power buttons are lit for all ISEs installed in the front of the storage enclosure. Power is applied to the front ISEs approximately 30 seconds after the rear ISEs. About 15 seconds after power is applied, the buttons flicker, indicating power-on self-tests.
- c. Check that all Fault indicators on the OCP are off. If a Fault indicator is lit green or amber, press the switch. If a Fault indicator is lit red, this indicates a faulty ISE.

For SF7x Storage Enclosures:

- a. Check that the TERM PWR indicator (behind the door of the OCP) is on for all positions installed.
 - b. Check that the SPLIT indicator (behind the door of the OCP) is off for all positions.
6. Press the Ready button on the OCP. The Ready indicator flickers, then lights steadily green once the ISE is on-line.

4.4 Installing a DECarray Cabinet in a DSSI VAXcluster Configuration

4.4.4 DSSI VAXcluster Final Verification

Once the hardware installation, cabling and labeling, and the powering up steps are complete, you are ready to configure the DSSI subsystem and verify the correct operation of each ISE in the array with the system.

Refer to the *KFMSA Module Installation and User Manual* for detailed information on the correct operation of each ISE. This manual contains procedures for establishing the communications between the ISEs, the adapter module, and the system. It also contains step-by-step procedures for reconfiguring the system with its newly installed DSSI devices.

Refer to the manuals for the disk ISE and tape ISE for detailed information on the local programs in the ISEs.

If at any time you detect a failure, refer to Chapter 9.

Once the verification is complete, close the cabinet doors; turn the hex-Allen fasteners one quarter turn clockwise to lock them. The system is ready to be turned over to the system manager.

4.5 Installing the DECarray Cabinet in a Striperset Configuration

This section describes how to install the DECarray cabinet in a striperset configuration. Make sure that all precautions for site preparation have been completed. Refer to Chapter 2.

Follow these steps:

- Cable the DECarray cabinet to the system (Section 4.5.1)
- Fill out the configuration worksheet (Section 4.5.2.1)
- Attach labels to DSSI cables and ISEs (Section 4.5.2)
- Power up the DECarray after successfully installing (Section 4.5.3)
- Check the DECarray for correct operation (Section 4.5.4)

Installing a DECarray Cabinet

4.5 Installing the DECarray Cabinet in a Stripeset Configuration

4.5.1 Cabling the DECarray Cabinet

Start at the rear of the DECarray cabinet.

1. Plug the main power cable of the storage array into its power receptacle.

WARNING

Hazardous voltages are in the storage array and in the components of the storage array.

When performing any operation involving the power source, turn off the power controls of all components and on the power controller. Disconnect the power cable from the source outlet. Perform the operation, then reconnect the power cable to the source.

2. Connect the 108-inch DSSI cable or cables (PN BC21Q-09) from the array DSSI I/O panel to the system I/O panel.
 - a. At the system I/O panel, remove the terminator or terminators. Store these terminators in the ESD pouch on the rear door of the storage array cabinet.
 - b. To determine which of the two DSSI connectors on the system I/O panel to connect to:
 - Open the system I/O panel.
 - Find the KFMSA module with the lowest XMI node number in the card cage.
 - Follow the cabling from the backplane to the system I/O panel.
 - While viewing the front of the I/O panel, note that the DSSI connector on the right is KFMSA DSSI bus 1 and on the left is bus 2.
 - a. Connect the DSSI cable from DSSI port 1 on the DECarray I/O panel to the DSSI bus 1 connector on the system I/O panel.
 - b. Connect the DSSI cable from DSSI port 2 on the I/O panel to the DSSI bus 2 connector on the system I/O panel.
 - Find the KFMSA module with the next lowest XMI node number. Repeat step 4 except this time, connect DSSI port 3 to the DSSI bus 1 connector and DSSI port 4 to the DSSI bus 2 connector.

Installing a DECarray Cabinet

4.5 Installing the DECarray Cabinet in a Stripeset Configuration

- Repeat this process for every KFMSA in the card cage, sequencing through the DSSI ports on the DECarray I/O panel. Connect the KFMSA DSSI bus 0 to odd numbered ports on the DECarray I/O panel, and DSSI bus 1 to even numbered ports.
- Connect each TF8xx series magazine tape ISE to a separate DSSI bus.

4.5.2 Labeling the Cables

This section describes how to correctly label the cables for the system, the DECarray, and its storage enclosures and magazine tape ISEs.

At this point, all steps in the previous sections must be complete.

Digital Services or trained installers must perform the steps that follow.

4.5.2.1 Completing the System Configuration Sheet

Fill out the system configuration sheet. Blank configuration worksheets are provided in Appendix E and in the *KFMSA Module Installation and User Manual*.

Note

Do not attempt to fill out and place the labels until you have completed the system configuration sheet.

The information from the system configuration sheet is used to fill out the labels correctly for all DSSI cables, SF7x OCPs, and magazine tape ISEs.

Refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out these labels.

Installing a DECarray Cabinet

4.5 Installing the DECarray Cabinet in a Stripeset Configuration

4.5.2.2 Filling Out the Labels

The labels are available in two sizes: the larger one for the DSSI cables, and the smaller one for the inside of the SF7x OCP door and the system I/O panel.

Refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out these labels.

For the stripeset configurations, the following colored labels are to be used on the SF7x OCP door, the front panel of the magazine tape ISE, and all DSSI cables.

Label Color(s)	Port	SF7x Position	SF3x Position
Blue	1	1 Right	2 Right Rear
Red	2	1 Left	2 Left Rear
Yellow	3	2 Right	2 Right Front
Green	4	2 Left	2 Left Front
Blue & white	5	3 Right	4 Right Rear
Red & white	6	3 Left	4 Left Rear
Yellow & white	7	4 Right	4 Right Front
Green & white	8	4 Left	4 Left Front
Blue, red	9	7 Right	1 Right Rear
Yellow, green	10	7 Left	1 Left Rear
Blue, red & white	11	8 Right	1 Right Front
Yellow, green & white	12	8 Left	1 Left Front
Blue, blue & white	13		3 Right Rear
Yellow, yellow & white	14		3 Left Rear
Blue & white, red & white	15		3 Right Front
Yellow & white, green & white	16		3 Left Front

Installing a DECarray Cabinet

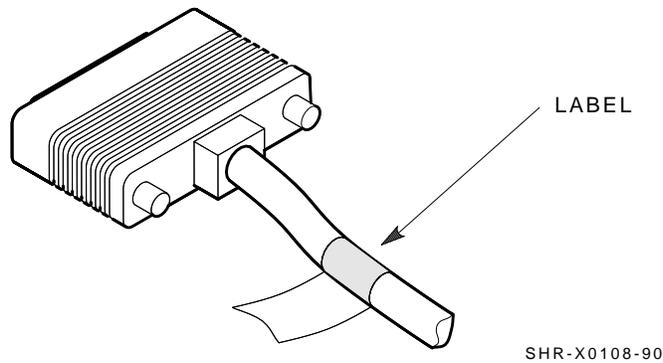
4.5 Installing the DECarray Cabinet in a Stripeset Configuration

4.5.2.3 Positioning the Labels

Once the labels have been filled out, place the labels on the DSSI cables and the SF7x OCP doors. Also place a label on the front of the magazine tape ISE.

On the DSSI cable, place the label four inches behind the DSSI connector (Figure 4-14).

Figure 4-14 Placing a Label on a DSSI Cable



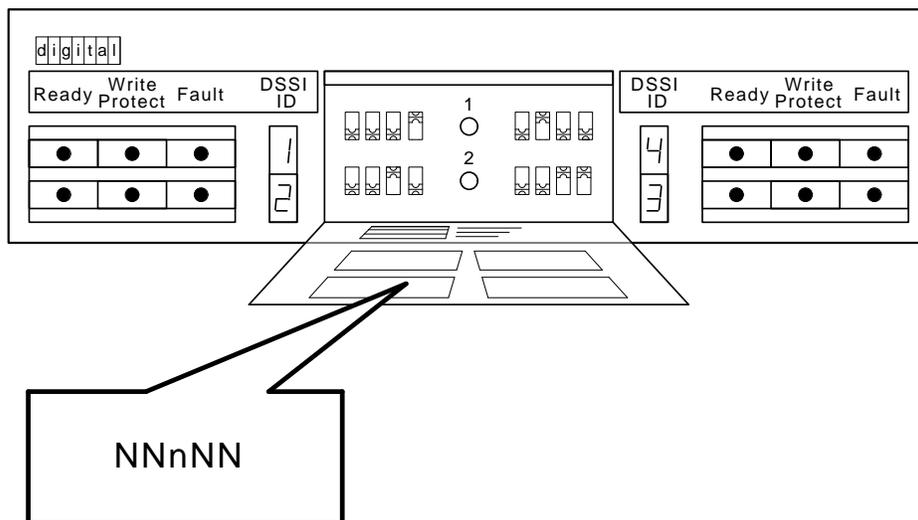
Installing a DECarray Cabinet

4.5 Installing the DECarray Cabinet in a Stripeset Configuration

Place the SF7x OCP label as shown in Figure 4-15 and the magazine tape ISE label as shown in Figure 4-16. The SF3x OCP does not have a place for a label.

Place the magazine tape ISE label as shown in Figure 4-16.

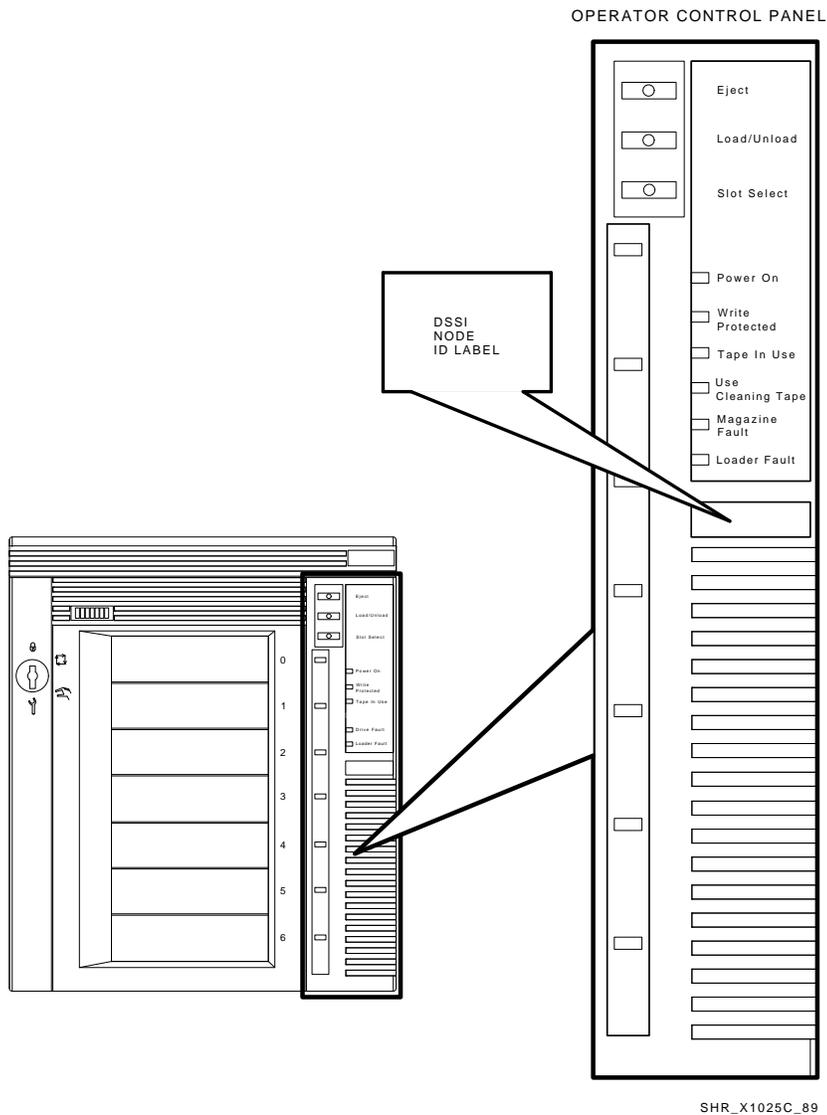
Figure 4-15 Placing a Label on the OCP Door



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Installing a DECarray Cabinet 4.5 Installing the DECarray Cabinet in a Stripeset Configuration

Figure 4-16 Placing a Label on the Magazine Tape ISE



Installing a DECarray Cabinet

4.5 Installing the DECarray Cabinet in a Stripeset Configuration

4.5.3 Powering Up the DECarray

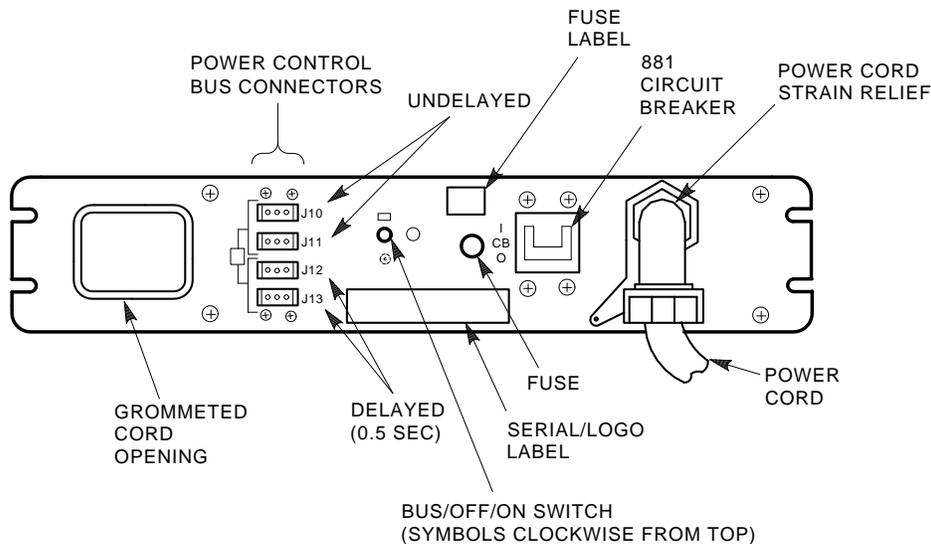
Once the DECarray has been installed and labeled, you are ready to apply power. Follow the steps in order.

CAUTION

Make sure that the ac power switch on each storage enclosure and magazine tape ISE installed is in the off position.

1. At the rear of the storage array, turn the power controller on (Figure 4-17). Make sure that the BUS/OFF/ON switch is in the down position.

Figure 4-17 Power Controller Circuit Breaker



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Installing a DECarray Cabinet

4.5 Installing the DECarray Cabinet in a Stripeset Configuration

2. Apply power to the magazine tape ISE installed in position 5 (if present). Then apply power to the one in position 6 (if present). Observe the front panel. If a failure occurs, refer to Chapter 9.
3. Apply power to each storage enclosure starting with position 1 and continuing in numerical order.
4. Press the dc power switch for each ISE in each storage enclosure in the DECarray. Start with position 1 and continue in numerical order. If the Fault indicator lights for any disk ISE, refer to Chapter 9.
5. Observe the OCP indicators.

For SF3x Storage Enclosures:

- a. Check that all dc power buttons are lit for all ISEs installed in the rear of the storage enclosure. After about 15 seconds after power is applied, the buttons flicker, indicating power-on self-tests.
- b. Check that all dc power buttons are lit for all ISEs installed in the front of the storage enclosure. Power is applied to the front ISEs approximately 30 seconds after the rear ISEs. About 15 seconds after power is applied, the buttons flicker, indicating power-on self-tests.
- c. Check that all Fault indicators on the OCP are off. If a Fault indicator is lit green or amber, press the switch. If a Fault indicator is lit red, it indicates a faulty ISE.

For SF7x Storage Enclosures:

- a. Check that the TERM PWR indicator (behind the door of the OCP) is on for all positions installed.
 - b. Check that the SPLIT indicator (behind the door of the OCP) is on for all positions.
6. Press the Ready button on the OCP. The Ready indicator flickers, then lights steadily green once the ISE is on-line.

Installing a DECarray Cabinet

4.5 Installing the DECarray Cabinet in a Stripeset Configuration

4.5.4 Stripeset Final Verification

Once the hardware installation, cabling and labeling, and the powering up steps are complete, you are ready to configure the DSSI subsystem and verify the correct operation of each ISE in the array with the system.

Refer to the *KFMSA Module Installation and User Manual* for detailed information on the correct operation of each ISE. This manual contains procedures for establishing the communications between the ISEs, the adapter module, and the system. It also contains step-by-step procedures for reconfiguring the system with its newly installed DSSI devices.

Refer to the manuals for the disk ISE and tape ISE for detailed information on the local programs in the ISEs.

If at any time you detect a failure, refer to Chapter 9.

Once the verification is complete, close the cabinet doors; turn the hex-Allen fasteners one quarter turn clockwise to lock. The system is ready to be turned over to the system manager.

5

Installing the SF3x Storage Enclosure in a DECarray Cabinet

This chapter describes the add-on installation of the SF3x storage enclosure into a DECarray cabinet. The SF3x storage enclosure may contain two, six, or twelve RF3x disk ISEs.

These procedures assume that the DECarray cabinet has previously been correctly installed and configured.

Only Digital Services, or customer personnel that have been trained in ESD procedures, should perform the installation.

Table 5-1 lists the tools required to install the SF3x enclosure into the DECarray cabinet.

Installing the SF3x Storage Enclosure in a DECarray Cabinet

Table 5–1 SF3x Required Tool List

Description	Part Number
Lifting device	FC-10117-AC
#0 Phillips screwdriver	29-10991-00
#1 Phillips screwdriver	29-11001-00
#2 Phillips screwdriver	29-11005-00
1/8-inch slot screwdriver	29-10802-00
5/16-inch slot screwdriver	29-10960-00
1/8-inch hex key	29-26115-00
3/16-inch hex key	29-26118-00
11/32-inch nutdriver	29-10674-00

5.1 Unpacking the SF3x Storage Enclosure

Unpack the SF3x shipping container. The enclosure is shipped in an environmental barrier bag.

Note

After unpacking, retain the container and all packing materials.

Examine the enclosure for physical damage. If you find *any* damage, do *not* attempt to install the enclosure. Notify your office immediately.

If there is no damage, then unpack all the boxes and bags, and identify all the parts by using Table 5–2.

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.1 Unpacking the SF3x Storage Enclosure

Table 5–2 SF35 Kit Contents

Description	Quantity	Part Number
SF3x storage enclosure	1	SF3x–BK (2-drive) SF3x–HK (6-drive) SF3x–JK (12-drive)
Slide mount assembly	1 ¹	
Weldment bracket (front top)	1	70–26052–01
Weldment bracket (front bottom)	1	70–26052–02
Shoulder screw, 10-32, 0.501	4	12–24007–01
Shoulder screw, 10-32, 0.438	6	12–24007–02
Lock washer, internal steel	10	90–06637–00
DSSI cable retainer	1	74–41302–01
Chassis retainer	2	74–35858–01
10-32 Phillips (SEMS)	4	12–21368–03
Machine screw, Phillips, 10-32, 0.500	2	90–06073–02
Machine screw, Phillips, 10-32, 1.5	2	90–06079–03
Lock washer, external steel	2	90–07651–00
AC power cord, 9-foot	1	17–00442–18
Owner’s manual	1	EK–SF7xS–OM
Installation guide	1	EK–SF2xx–IG
Label booklet	1	36–32882–01

¹The slide mount assembly comes assembled and does not have a single part number.

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.2 Where to Install the SF3x Storage Enclosure

5.2 Where to Install the SF3x Storage Enclosure

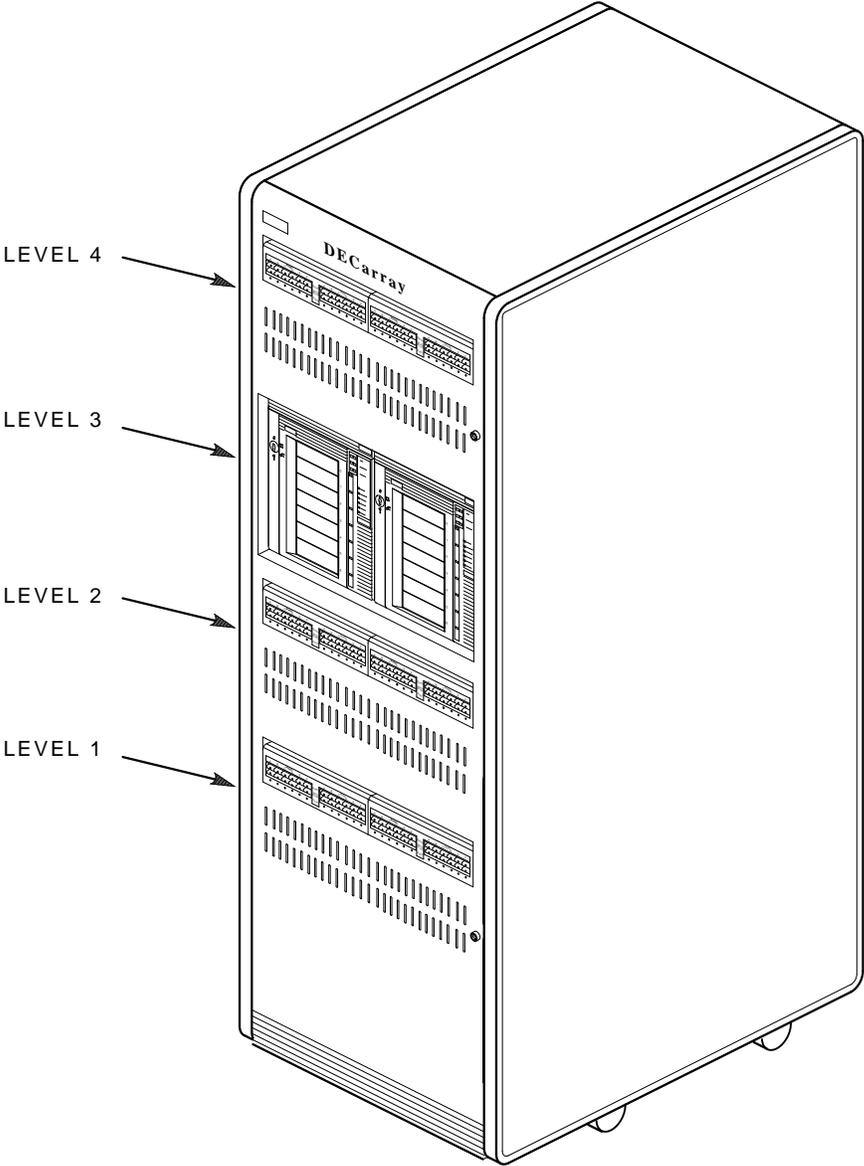
Storage enclosures must be installed in the DECarray cabinet in ascending numerical order (see Figure 5–1). Storage enclosure positions are numbered from 1 to 8 on the left and right chassis side rails. These numbers are visible only when the front or rear doors of the DECarray cabinet are open.

SF3x storage enclosures can only occupy positions 1, 2, 3, 4, 7, and 8.

In split-bus mode the ISEs occupying the left-side slots share a DSSI bus, and the ISEs occupying the right-side slots a different DSSI bus. This is true for the front six ISEs and the rear six ISEs. Therefore, a fully-populated SF3x enclosure in split-bus mode will have four DSSI buses, each with three ISEs connected to it. Four DSSI adapter ports are required for each SF3x storage enclosure.

Installing the SF3x Storage Enclosure in a DECarray Cabinet
5.2 Where to Install the SF3x Storage Enclosure

Figure 5-1 DECarray Storage Enclosure Locations



MA-0436-92.DG

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.3 Checking the System Configuration Sheet

5.3 Checking the System Configuration Sheet

Locate the system configuration sheet. If you cannot locate this sheet or if the one that is available is either not filled out or filled out incorrectly, fill one out before continuing with the installation procedure. Blank configuration sheets are provided in Appendix E.

Figures 5-2 through 5-4 show examples of a system configuration sheet.

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.3 Checking the System Configuration Sheet

Figure 5-2 Single-System Configuration Sheet

KFMSA/DSSI Single-system Configuration Sheet

KFMSA XMI Node # _____	
Bus 1 DSSI ID # <u> 7 </u>	Bus 2 DSSI ID # <u> 7 </u>

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Device Type</td><td style="text-align: center;">Tape</td><td>ALLO_CLASS</td><td style="text-align: center;">0</td></tr> <tr><td>DSSI ID #</td><td style="text-align: center;">0</td><td>DECarray #</td><td style="text-align: center;">5</td></tr> <tr><td>Node Name</td><td>_____</td><td>UNITNUM</td><td>_____</td></tr> <tr><td>System ID</td><td colspan="3">_____</td></tr> </table>	Device Type	Tape	ALLO_CLASS	0	DSSI ID #	0	DECarray #	5	Node Name	_____	UNITNUM	_____	System ID	_____			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Device Type</td><td style="text-align: center;">Tape</td><td>ALLO_CLASS</td><td style="text-align: center;">0</td></tr> <tr><td>DSSI ID #</td><td style="text-align: center;">0</td><td>DECarray #</td><td style="text-align: center;">6</td></tr> <tr><td>Node Name</td><td>_____</td><td>UNITNUM</td><td>_____</td></tr> <tr><td>System ID</td><td colspan="3">_____</td></tr> </table>	Device Type	Tape	ALLO_CLASS	0	DSSI ID #	0	DECarray #	6	Node Name	_____	UNITNUM	_____	System ID	_____		
Device Type	Tape	ALLO_CLASS	0																														
DSSI ID #	0	DECarray #	5																														
Node Name	_____	UNITNUM	_____																														
System ID	_____																																
Device Type	Tape	ALLO_CLASS	0																														
DSSI ID #	0	DECarray #	6																														
Node Name	_____	UNITNUM	_____																														
System ID	_____																																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Device Type</td><td style="text-align: center;">RF35</td><td>ALLO_CLASS</td><td style="text-align: center;">0</td></tr> <tr><td>DSSI ID #</td><td style="text-align: center;">1</td><td>DECarray #</td><td style="text-align: center;">1</td></tr> <tr><td>Node Name</td><td>_____</td><td>UNITNUM</td><td>_____</td></tr> <tr><td>System ID</td><td colspan="3">_____</td></tr> </table>	Device Type	RF35	ALLO_CLASS	0	DSSI ID #	1	DECarray #	1	Node Name	_____	UNITNUM	_____	System ID	_____			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Device Type</td><td style="text-align: center;">RF35</td><td>ALLO_CLASS</td><td style="text-align: center;">0</td></tr> <tr><td>DSSI ID #</td><td style="text-align: center;">1</td><td>DECarray #</td><td style="text-align: center;">2</td></tr> <tr><td>Node Name</td><td>_____</td><td>UNITNUM</td><td>_____</td></tr> <tr><td>System ID</td><td colspan="3">_____</td></tr> </table>	Device Type	RF35	ALLO_CLASS	0	DSSI ID #	1	DECarray #	2	Node Name	_____	UNITNUM	_____	System ID	_____		
Device Type	RF35	ALLO_CLASS	0																														
DSSI ID #	1	DECarray #	1																														
Node Name	_____	UNITNUM	_____																														
System ID	_____																																
Device Type	RF35	ALLO_CLASS	0																														
DSSI ID #	1	DECarray #	2																														
Node Name	_____	UNITNUM	_____																														
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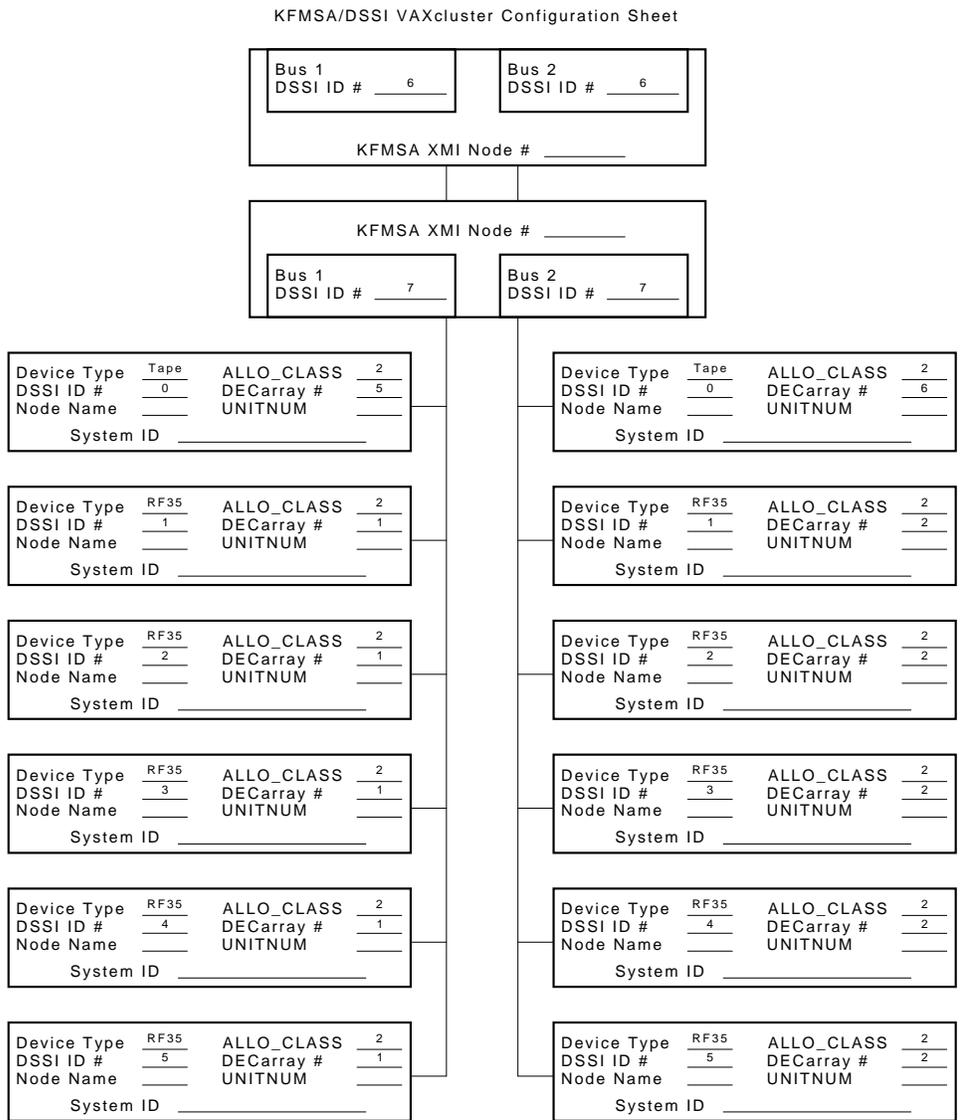
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Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.3 Checking the System Configuration Sheet

Figure 5-3 DSSI VAXcluster Configuration Sheet (Two-System)

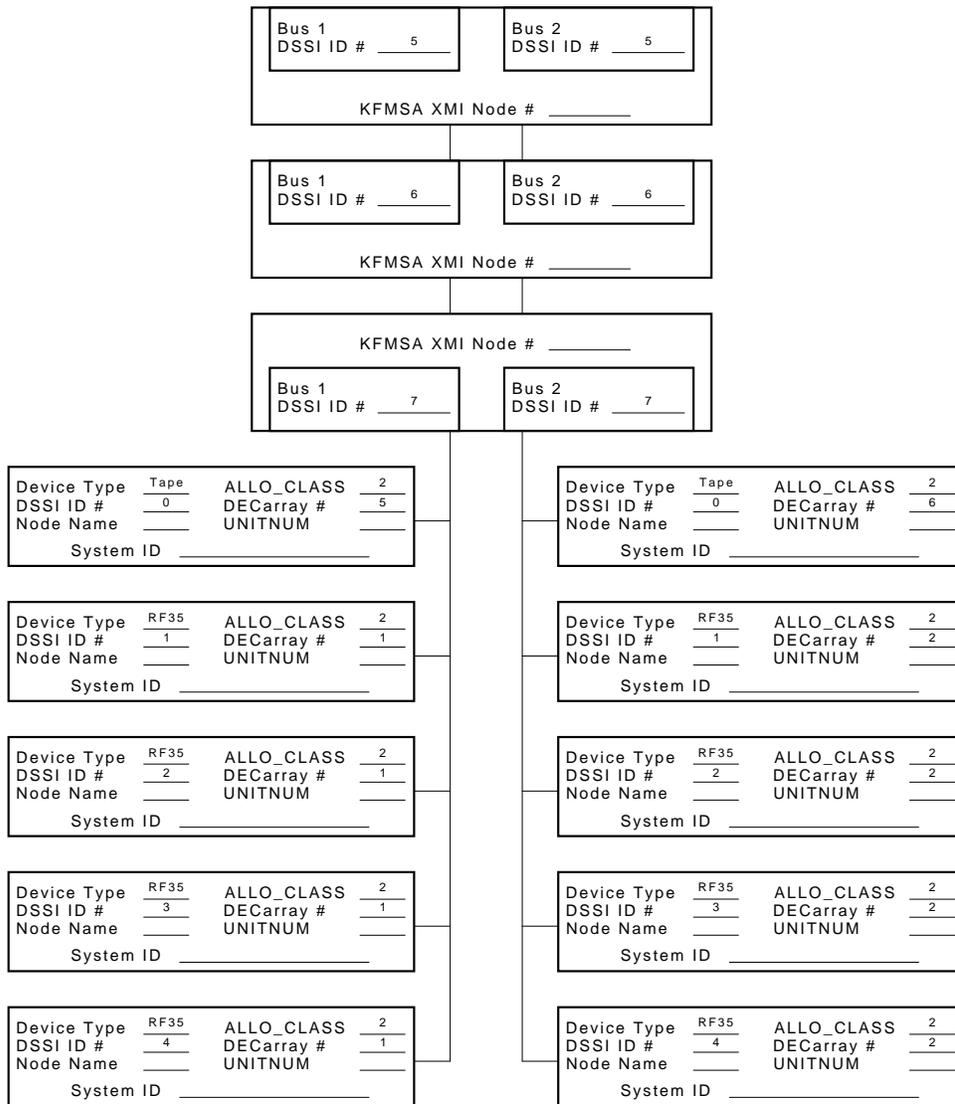


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Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.3 Checking the System Configuration Sheet

Figure 5-4 DSSI VAXcluster Configuration Sheet (Three-System)



MA-0411-92.DG

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.4 Installation Procedure

5.4 Installation Procedure

This section describes the step-by-step procedures for installing an SF3x storage enclosure in DECarray positions 1, 2, 3, 4, 7, or 8.

Be sure to:

- Follow each step in order, and do not skip any steps
- Leave sufficient room to perform the installation (approximately 1.5 meters to 1.8 meters [5 feet to 6 feet] front and rear of the DECarray cabinet)

WARNING

Observe all ESD precautions and procedures. An antistatic wrist strap is provided inside the DECarray front and rear doors.

WARNING

Do not attempt to pick up or support the SF3x by the handle in the rear of the enclosure. Doing so will injure the person attempting the installation or damage the power supply.

To maintain stability, extend only one storage enclosure or magazine tape ISE on the slide mounts at a time.

5.4.1 Preparing the DECarray Cabinet

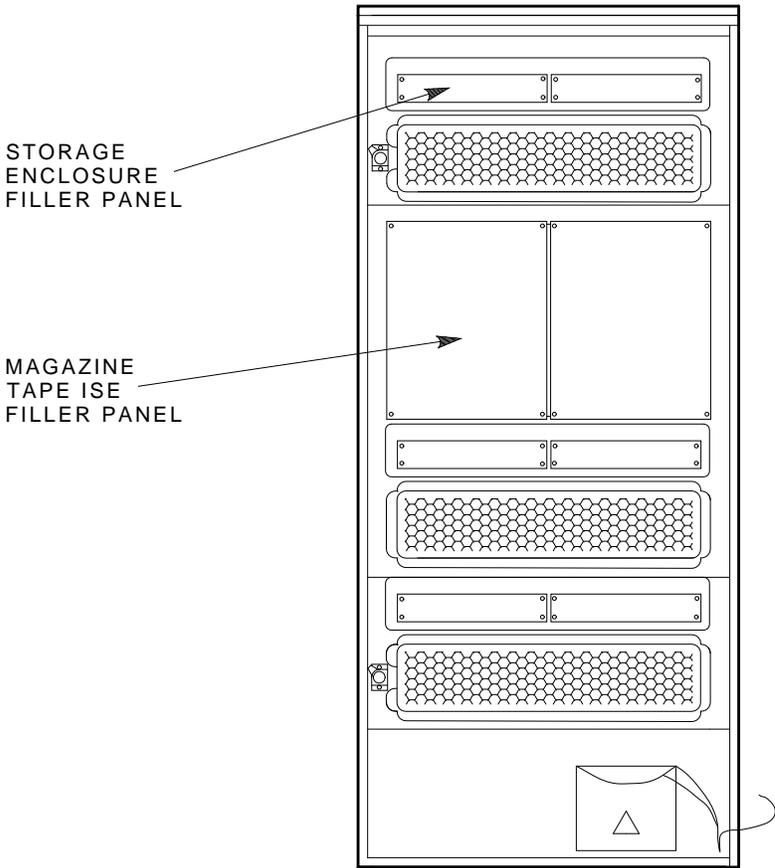
The following procedure describes how to prepare the DECarray to receive the SF3x storage enclosure(s):

1. Place the SF3x to be installed to one side, in front of the DECarray cabinet.
2. Open the front and rear doors of the DECarray cabinet (Figure 5–5).
3. Remove the front door filler panel that corresponds to the position of the DECarray cabinet you are installing (Figure 5–5).

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.4 Installation Procedure

Figure 5-5 Removing a Filler Panel



MA-0418-92.DG

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.4 Installation Procedure

5.4.2 Hardware Installation Procedures

Perform the following steps completely and in the order presented.

CAUTION

Before performing the following steps, refer to the system documentation for the correct procedure to perform an orderly shutdown of the system that the DECarray is connected to.

1. Install the ac power cord (Figure 5–6).
 - a. Go to rear of cabinet. Open the DSSI I/O panel by loosening the two captive screws on the right.

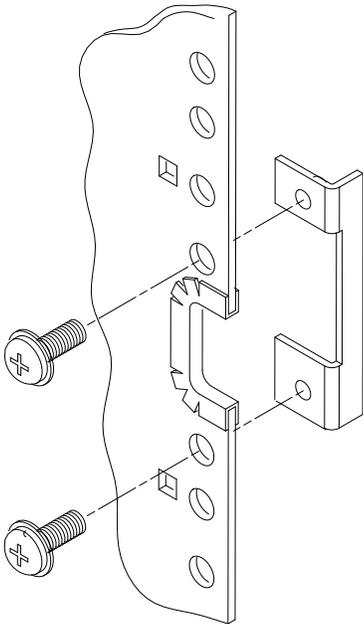
CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

- b. Locate the ac power cord retainer bracket at the level that you are installing the SF3x storage enclosure.
 - c. Loosen the lower screw of the ac retainer bracket. Remove the upper ac power cord retainer bracket screw and tilt the retainer 45 degrees. Then retighten the lower screw.
 - d. Place the ac power cord in the retainer space with the shrouded male plug end inside the cabinet side rail.
 - e. Leave approximately 0.6 meters (2 feet) of slack at the position location.
 - f. Loosen the lower screw and put the retainer bracket back to its original position. Then reinsert the upper screw and tighten both the top and bottom screws.
 - g. Connect the male end of the ac power cord to an outlet on the power controller, making sure to maintain a proper balance on the phase loading.

Installing the SF3x Storage Enclosure in a DECarray Cabinet
5.4 Installation Procedure

Figure 5-6 AC Power Cord Retainer



SHR-X0137-90

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.4 Installation Procedure

2. Install the slide mount and associated hardware (Figure 5-7).

The slide mount has two parts, the *adjustable* end and the *slotted* end. The adjustable end has four screws that, when loosened, allow the slide mount to be placed in the cabinet and then extended to make a secure fit.

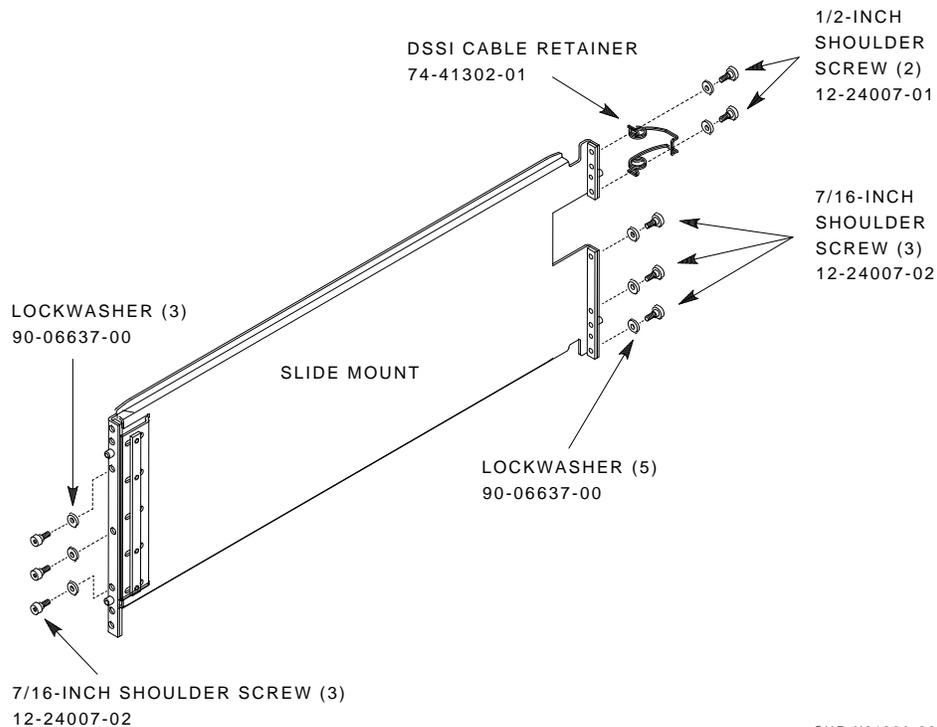
When installing the slide mount in positions 1, 3, 5, and 7, install the slotted end in the front left cabinet frame rail. When installing the slide mount in positions 2, 4, 6, and 8, install the adjustable end in the front right cabinet frame rail. The number for each position is labeled on the right and left cabinet frame rail on the front and the rear of the cabinet.

- a. Loosen the four screws in the adjustable end of the slide mount.
- b. From the front of the cabinet, place the slide mount in the cabinet so that the stamped UP and arrow are visible.
- c. Align the guide pin with the X stamped in the cabinet frame rail.
- d. Install one 7/16-inch shoulder screw and washer (hand-tighten) in the center threaded hole of the slide mount.
- e. Install the opposite end of the slide mount into the rear cabinet side rail. Again, align the guide pins with the X on the rail.
- f. Install one 7/16-inch shoulder screw and washer (hand-tighten) in the center threaded hole of the slide mount.
- g. At the rear of the cabinet, install two 1/2-inch shoulder screws with washers and the DSSI cable retainer clip. Note that the DSSI cable retainer clip must always point away from the center of the cabinet.
 - Place a 1/2-inch shoulder screw with a washer through the upper hole of the DSSI cable retainer clip and install the screw (hand-tighten) in the top threaded hole in the slide mount.
 - Place the other 1/2-inch shoulder screw with a washer through the lower hole of the DSSI cable retainer clip and install the screw (hand-tighten) in the threaded hole in the slide mount.

Installing the SF3x Storage Enclosure in a DECarray Cabinet 5.4 Installation Procedure

- h. While facing the rear of the cabinet, install two 7/16-inch shoulder screws with washers (hand-tighten)—one screw in the bottom threaded hole and the other in the threaded hole beneath the center rear shoulder screw (hand-tighten) previously installed.
- i. While facing the front of the cabinet, install two 7/16-inch shoulder screws with washers (hand-tighten)—one screw in the bottom threaded hole and the other in the threaded hole beneath the center rear shoulder screw (hand-tighten) previously installed.
- j. Tighten all shoulder screws.
- k. Tighten the four slide mount screws.

Figure 5-7 Installing the Slide Mount



Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.4 Installation Procedure

1. From the front of the cabinet, install the upper and lower weldment brackets on the cabinet side rail using 1/2-inch shoulder screws and washers (Figure 5-8).

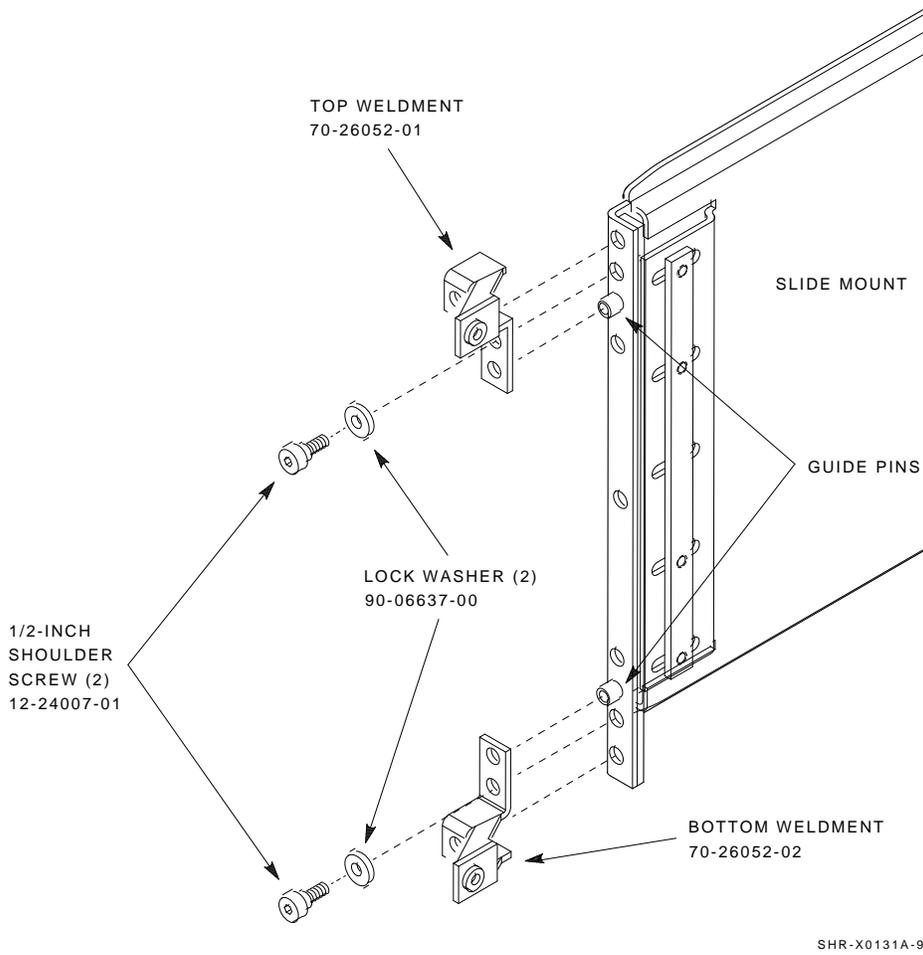
The center hole of the weldment bracket goes over the guide pin on the slide mount so the large end of the top weldment bracket points up and the large end of the bottom weldment bracket points down, regardless of whether you are installing the brackets on the front right or left cabinet frame rails.

Note

Do NOT tighten the screws at this time.

Installing the SF3x Storage Enclosure in a DECarray Cabinet 5.4 Installation Procedure

Figure 5-8 Installing the Weldment Brackets

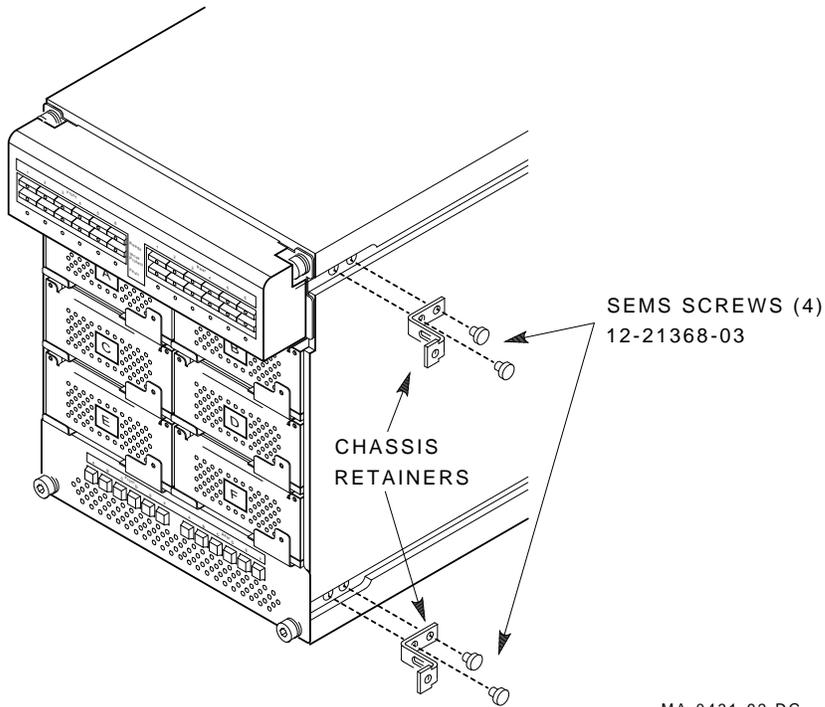


Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.4 Installation Procedure

3. Install the SF3x storage enclosure.
 - a. Install both chassis retainers on the front, right or left side, of the SF3x extrusion tube (top and bottom, Figure 5-9).

Figure 5-9 Chassis Retainers with Front Cover Removed



Installing the SF3x Storage Enclosure in a DECarray Cabinet

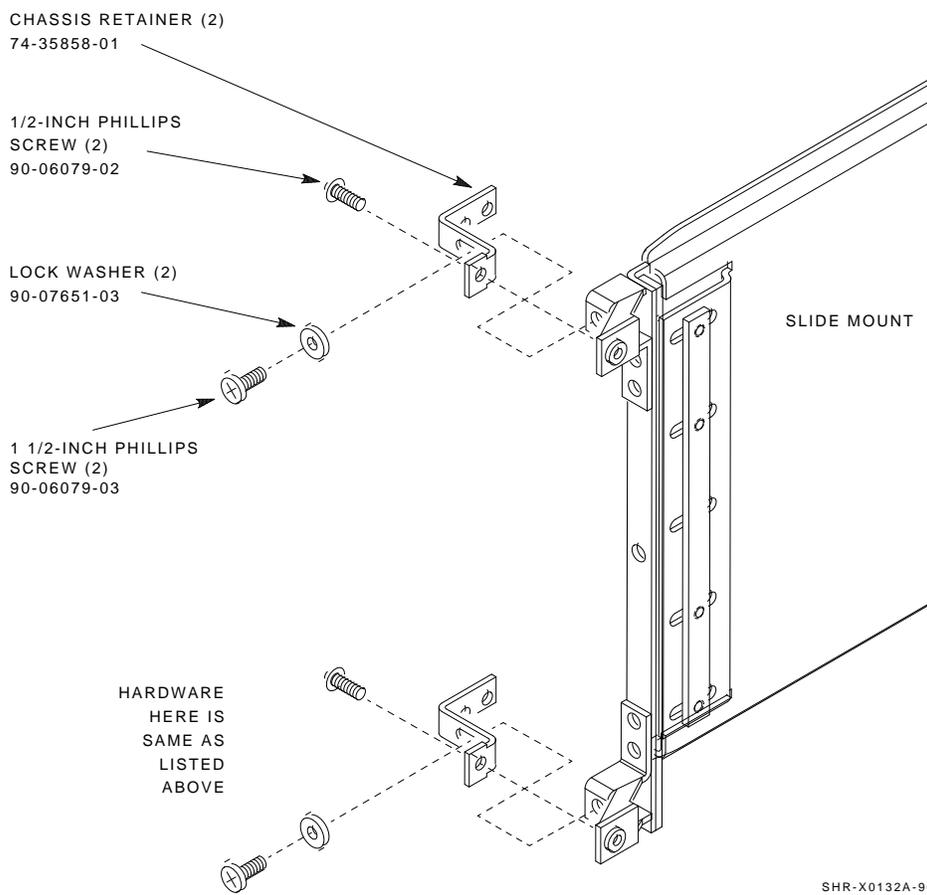
5.4 Installation Procedure

- b. At the front of the cabinet, hoist the SF3x assembly by using the lifting device or three people to lift the SF3x storage enclosure up and onto the slide mount. Push the assembly halfway into the cabinet.
- c. From the rear of the DECarray cabinet, pull the SF3x assembly all the way onto the slide mount until the chassis retainers contact the weldment brackets.
- d. Install and tighten the two outer weldment bracket screws, then install and tighten the two inner weldment bracket screws (Figure 5–10).
- e. Tighten the upper and lower weldment 1/2-inch shoulder screws and washers.

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.4 Installation Procedure

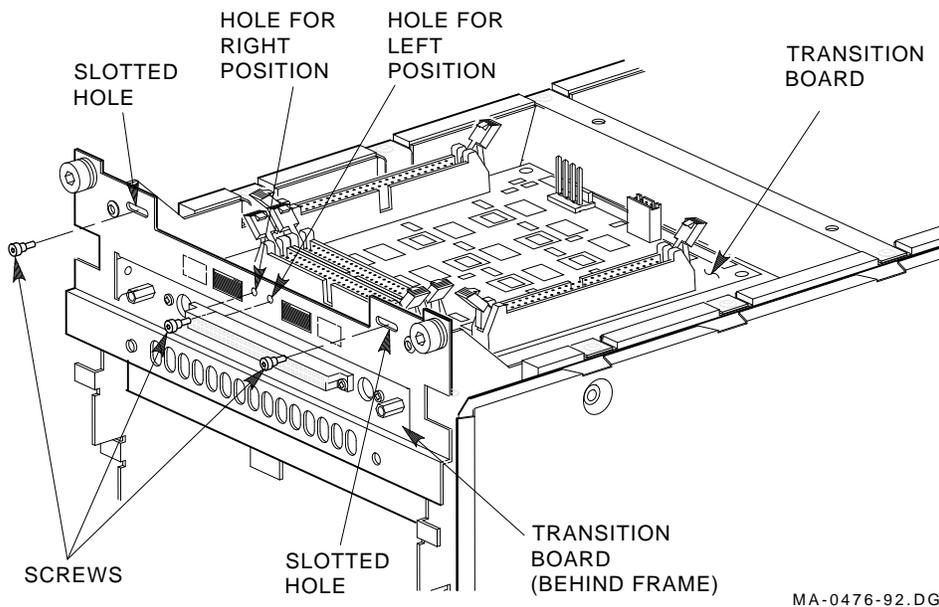
Figure 5-10 Securing the SF3x to the Weldment Brackets



Installing the SF3x Storage Enclosure in a DECarray Cabinet 5.4 Installation Procedure

4. Adjust the SF3x OCP mount (Figure 5-11) to the **LEFT** for positions 1, 3, and 7, and to the **RIGHT** for positions 2, 4, and 8.

Figure 5-11 Adjusting the OCP



Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.4 Installation Procedure

5. Make sure the DSSI node ID assignments are correct. The DSSI node ID for each slot in the SF3x backplane comes factory set, as shown in Table 5-3. However, some configurations may require you to change the DSSI node ID to something other than the factory setting.

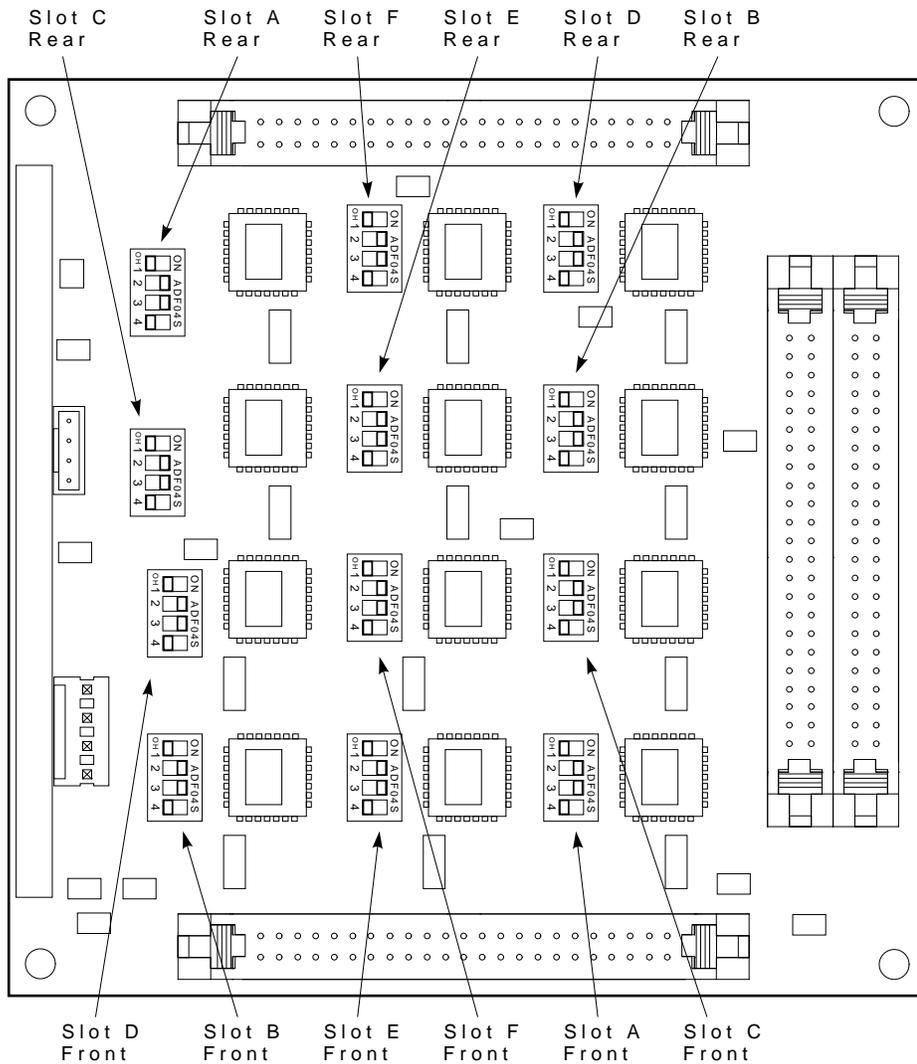
Table 5-3 SF3x Factory-Set DSSI Node IDs

Position	Backplane Location	DSSI Node ID
A	upper left slot	0
B	upper right slot	1
C	middle left slot	2
D	middle right slot	3
E	lower left slot	4
F	lower right slot	5

You can change the DSSI node ID for an ISE in any given slot position by using DIP switches provided on the SF3x enclosure's transition module. Figure 5-12 shows the location of the switches for each slot position. Table 5-4 shows what the switches must be set to for each slot position.

Installing the SF3x Storage Enclosure in a DECarray Cabinet 5.4 Installation Procedure

Figure 5-12 SF3x Transition Module DSSI Node ID Switches



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Installing the SF3x Storage Enclosure in a DECarray Cabinet
5.4 Installation Procedure

Table 5–4 DSSI Node ID Switch Settings for SF3x Storage Enclosure

Slot Position	Front Switch	Rear Switch	DSSI Node ID	Switch Positions ¹			
				1	2	3	4
A	S3	S10	0	X	1	0	0
			1	X	0	0	0
			2	X	1	1	0
			3	X	0	1	0
			4	X	1	0	1
			5	X	0	0	1
			6	X	1	1	1
			7	X	0	1	1
B	S1	S9	0	X	0	1	0
			1	X	1	1	0
			2	X	0	0	0
			3	X	1	0	0
			4	X	0	1	1
			5	X	1	1	1
			6	X	0	0	1
			7	X	1	0	1
C	S6	S7	0	X	1	1	0
			1	X	0	1	0
			2	X	1	0	0
			3	X	0	0	0
			4	X	1	1	1
			5	X	0	1	1
			6	X	1	0	1
			7	X	0	0	1
D	S4	S12	0	X	0	0	1
			1	X	1	0	1
			2	X	0	1	1
			3	X	1	1	1
			4	X	0	0	0
			5	X	1	0	0
			6	X	0	1	0
			7	X	1	1	0

¹ 1 = On, 0 = Off, X = Does not matter.

(continued on next page)

Installing the SF3x Storage Enclosure in a DECarray Cabinet
5.4 Installation Procedure

Table 5–4 (Cont.) DSSI Node ID Switch Settings for SF3x Storage Enclosure

Slot Position	Front Switch	Rear Switch	DSSI Node ID	Switch Positions ¹			
				1	2	3	4
E	S2	S8	0	X	1	0	1
			1	X	0	0	1
			2	X	1	1	1
			3	X	0	1	1
			4	X	1	0	0
			5	X	0	0	0
			6	X	1	1	0
			7	X	0	1	0
F	S5	S11	0	X	0	1	1
			1	X	1	1	1
			2	X	0	0	1
			3	X	1	0	1
			4	X	0	1	0
			5	X	1	1	0
			6	X	0	0	0
			7	X	1	0	0

¹ 1 = On, 0 = Off, X = Does not matter.

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.4 Installation Procedure

CAUTION

Observe all ESD precautions and procedures. An antistatic wrist strap is provided inside the DECarray front and rear doors.

6. Install the OCP (Figure 5-13).

Note

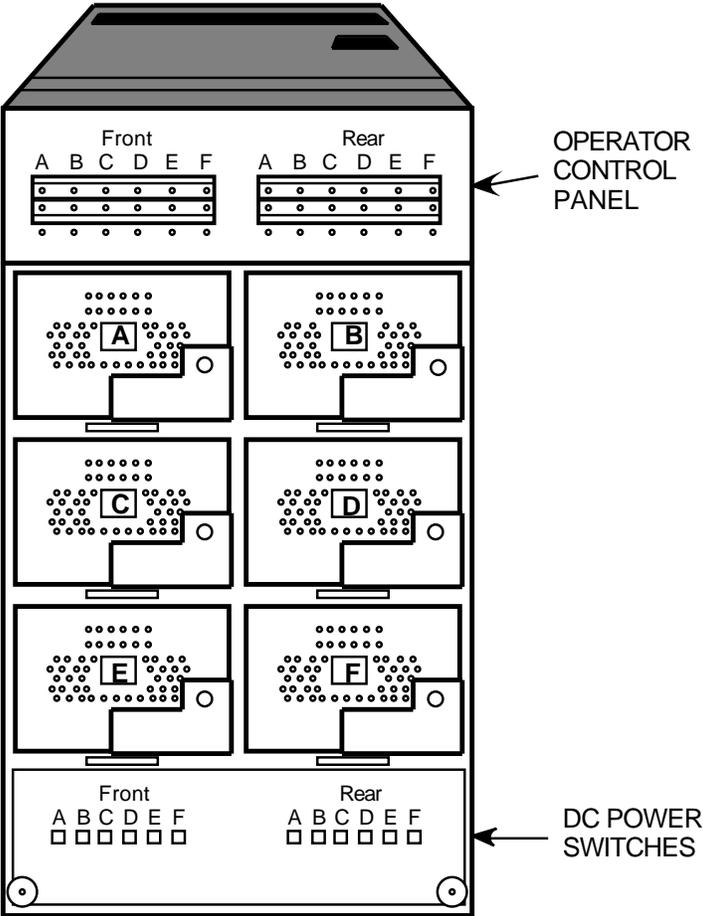
Make sure that the power is off to the enclosure.

Make sure that ALL the buttons are in the out position.

7. Make sure that all drive dc power switches are out (Figure 5-13).
8. At the rear of the SF3x enclosure, make sure that the ac power switch is in off or in the 0 position (Figure 5-14).
9. Also check the select line voltage. Set it to the correct setting for your application.
10. At this time, connect the ac power cord to the SF3x enclosure.

Installing the SF3x Storage Enclosure in a DECarray Cabinet
5.4 Installation Procedure

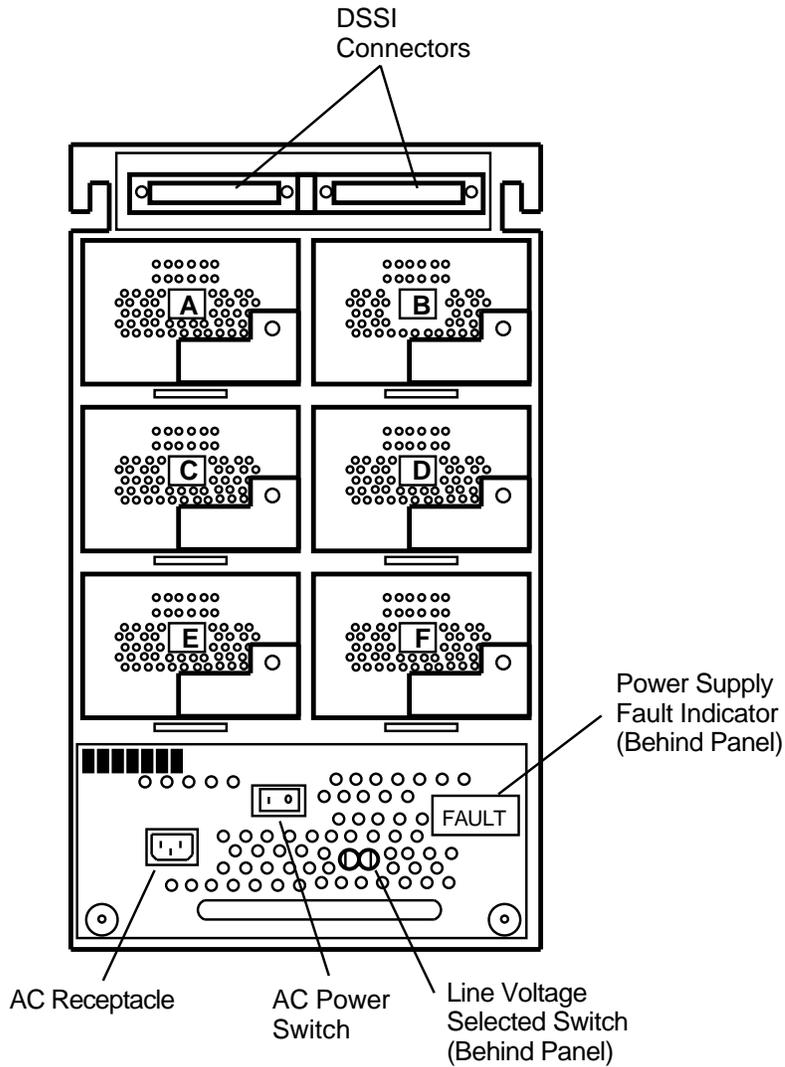
Figure 5-13 SF3x Enclosure Front View with Front Cover Removed



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Installing the SF3x Storage Enclosure in a DECarray Cabinet
5.4 Installation Procedure

Figure 5-14 SF3x Storage Enclosure Rear View with Rear Cover Removed



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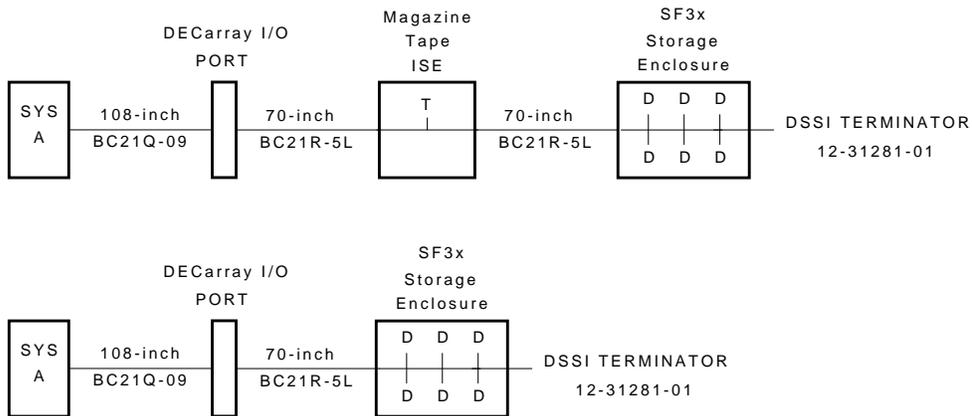
Installing the SF3x Storage Enclosure in a DECarray Cabinet
5.5 Cabling the SF3x in the DECarray Cabinet

5.5 Cabling the SF3x in the DECarray Cabinet

This section describes the step-by-step procedure for cabling the SF3x storage enclosure to the existing DSSI bus configuration of the DECarray.

Figure 5-15 shows the possible single-system configurations. Figure 5-16 shows the possible DSSI VAXcluster configurations. Figure 5-17 shows the possible stripeset configurations.

Figure 5-15 Single-System Bus Configurations

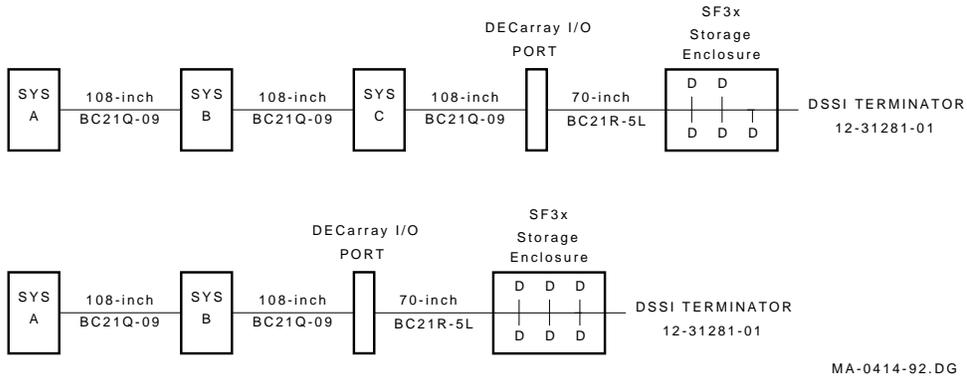


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Installing the SF3x Storage Enclosure in a DECarray Cabinet

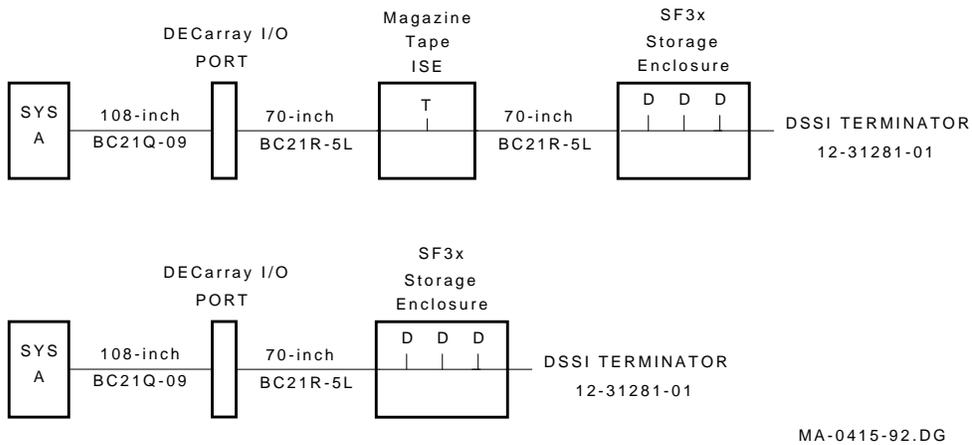
5.5 Cabling the SF3x in the DECarray Cabinet

Figure 5-16 DSSI VAXcluster Bus Configurations



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Figure 5-17 Stripset Bus Configurations



MA-0415-92.DG

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.5 Cabling the SF3x in the DECarray Cabinet

5.5.1 Through-Bus Configuration

Use the following procedures for cabling an SF3x storage enclosure in a DECarray cabinet configured for single-system or DSSI VAXcluster configurations in through-bus mode.

The following procedures assume that all devices installed previous to a new installation of an SF3x storage enclosure are cabled in the single-system configuration.

5.5.1.1 Identifying DSSI Connectors on the System I/O Panel

The following procedure explains how to locate and identify the DSSI connections on the host system I/O panel.

Note

Before performing the following steps, refer to the system documentation for the correct procedure to perform an orderly shutdown of the systems that the DECarray is connected to.

Note

This procedure assumes that no SF3x storage enclosures are installed internally in the system cabinet. If SF3x storage enclosures are in the system cabinet, then one of the KFMSA modules in the system XMI backplane must be connected to those SF3x storage enclosures. Do NOT use this KFMSA module or its DSSI connections to connect the system to the DECarray. Do NOT count this KFMSA module in the following steps.

1. Open the system I/O panel on the system by removing the screws that secure the I/O panel to the system chassis. Let the panel swing down to its rest position.
2. Find the first KFMSA module installed in the XMI backplane of the system. It will be the KFMSA module in the lowest numbered slot of the XMI backplane.
3. Follow the cabling from the backplane to the system I/O panel.
4. While viewing the front of the I/O panel, note that the DSSI connector on the left is KFMSA DSSI bus 2 and the DSSI connector on the right is KFMSA DSSI bus 1. These connectors should be labeled BLUE for bus 1 and RED for bus 2.

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.5 Cabling the SF3x in the DECarray Cabinet

5. Find the next KFMSA module installed in the XMI backplane of the system. It will be the next KFMSA module after the KFMSA module in the lowest numbered slot of the XMI backplane.
6. Follow the cabling from the backplane to the system I/O panel.
7. While viewing the front of the I/O panel, note that the DSSI connector on the left is KFMSA DSSI bus 2 and the DSSI connector on the right is KFMSA DSSI bus 1.

If these connectors are not labeled, label them now with the small colored labels in the *SF Family Label Booklet*.

5.5.1.2 Cabling Position 1 with a Magazine Tape ISE

WARNING

Before performing the following steps, refer to the system documentation for the correct procedure to perform an orderly shutdown of the system that the DECarray is connected to.

The following steps are for cabling a storage enclosure in position 1 with a magazine tape ISE in position 5 and/or position 6.

CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

1. Tighten the shipping screw in the rear, upper right corner of the magazine tape ISE.
2. Remove the DSSI terminator from the bottom DSSI connector on the rear of the magazine tape ISE.
3. Install a 42-inch DSSI cable (part number BC21Q-3F) in the bottom DSSI connector on the rear of the magazine tape ISE.
4. Loosen the shipping screw in the rear, upper right corner of the magazine tape ISE.
5. Pull the inner assembly of the magazine tape ISE out to the head cleaning position (first mechanical stop).

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.5 Cabling the SF3x in the DECarray Cabinet

6. Route the DSSI cable under the cable retainers on the right side of the cabinet. Cabling the magazine tape ISE with the inner assembly pulled out to the head cleaning position ensures that the correct cable slack will be provided when the inner assembly is pushed back into the extrusion tube.
7. Push the inner assembly of the magazine tape ISE back into the extrusion tube.
8. Remove the two screws that hold the cable tray of the SF3x enclosure in position 1 in place and slide the cable tray out to expose the four DSSI connectors.
9. Connect the 42-inch DSSI cable from the bottom DSSI connector of the magazine tape ISE in position 5 to the rightmost DSSI connector for the rear ISEs in the SF3x storage enclosure in position 1 (P1) (see Figure 5–18).
10. If applicable, connect the 42-inch DSSI cable from the bottom DSSI connector of the magazine tape ISE in position 6 to the rightmost DSSI connector for the front ISEs in the SF3x storage enclosure in position 1 (P3).
11. Install a DSSI terminator in the leftmost DSSI connector in the cable tray (P2 for the rear ISEs and P4 for the front ISEs).
12. Slide the cable tray back into place and tighten the two screws.
13. Install a 70-inch cable (PN BC21R-5L) from the top connector of the magazine tape ISE to the appropriate DECarray I/O port. Use I/O port P9 for the magazine tape ISE in position 5, and I/O port P10 for the magazine tape ISE in position 6.

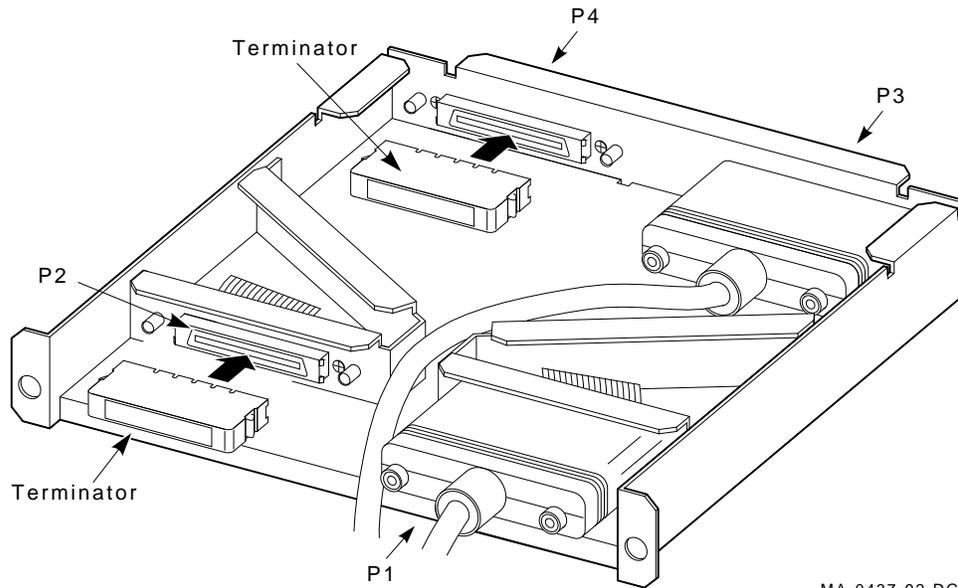
CAUTION

Do not apply power to the SF3x storage enclosure at this time.

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.5 Cabling the SF3x in the DECarray Cabinet

Figure 5-18 Cabling an SF3x in Through-Bus Mode



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5.5.1.3 Cabling Positions 2, 3, 4, 7, and 8

CAUTION

Before performing the following steps, refer to the system documentation for the correct procedure to perform an orderly shutdown of the system that the DECarray is connected to.

1. At the rear of the DECarray, locate the DSSI I/O panel at the bottom. Use a 3/16-inch flatblade screwdriver to loosen the two captive screws at the right of the panel.
2. Swing open and remove the panel from the cabinet frame.

CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

3. Remove the two Phillips screws that hold the panel blank in the appropriate ports of the I/O panel. Refer to Section A.4 to identify the appropriate I/O ports for your installation.

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.5 Cabling the SF3x in the DECarray Cabinet

4. Install a 70-inch DSSI cable (PN BC21R-5L) in place of the panel blanks you just removed in the previous step. Secure this cable to the I/O panel with the two Phillips screws removed from the blank panel.
5. Remove the two screws that hold the cable tray of the SF3x enclosure in position 1 in place and slide the cable tray out to expose the four DSSI connectors.
6. Plug the other end of the DSSI cable into the appropriate connector in the cable tray of the SF3x storage enclosure (Section A.4).
7. Install a DSSI terminator in the remaining DSSI connector for the ISEs you are cabling. Refer to Section A.4 to determine the correct connections for your configuration.
8. Slide the cable tray back into place and tighten the two screws.
9. Route the DSSI cable under the cable retainers.
10. Plug a 108-inch DSSI cable (PN BC21Q-09) into the DSSI cable you just installed in the DECarray I/O port and tighten the retainer screws with your fingers.
11. Plug the other end of the 108-inch DSSI cable into the appropriate port on the I/O panel at the rear of the host system cabinet.

CAUTION

Do not apply power to the storage enclosure at this time.

12. Replace the DECarray I/O panel to its original position and secure it by tightening the captive screws.

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.5 Cabling the SF3x in the DECarray Cabinet

5.5.2 Split-Bus Configuration

Perform the following procedure on each half of the SF3x enclosure that is being used in the split-bus configuration.

CAUTION

To maintain stability, extend only one storage enclosure or magazine tape ISE on the slide mounts at a time.

1. Remove the OCP from the front of the SF3x enclosure.
2. Remove the four slide assembly screws from the front of the enclosure and slide the inner assembly out until the drawer locks in the service position.
3. Remove the rear cover, then push the inner assembly forward from the rear.

Note

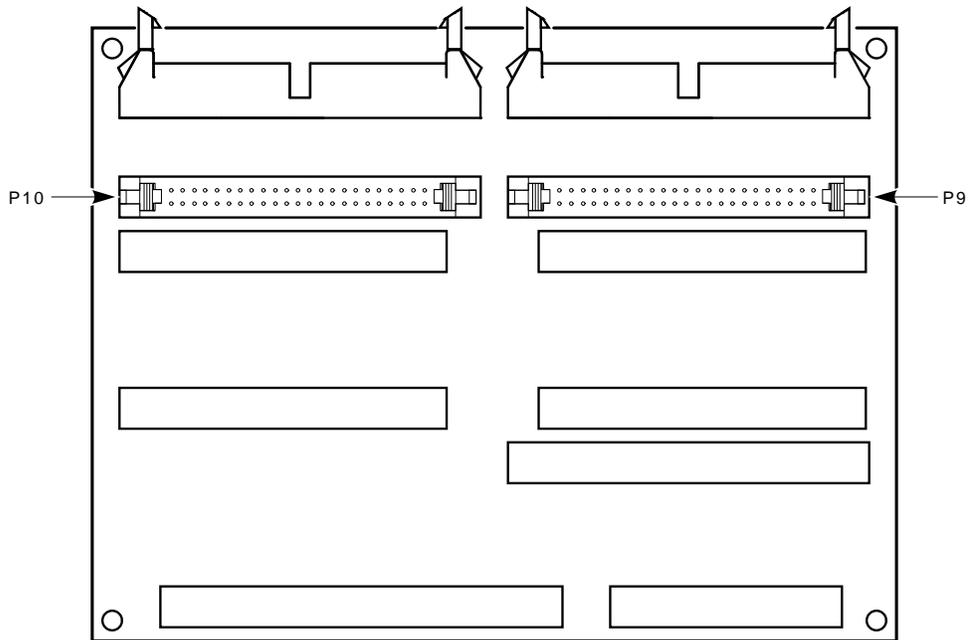
Do NOT completely remove the inner chassis from the extrusion tube, and extend only one storage enclosure at a time.

4. Remove the fan assembly cover by loosening the four knurled screws that hold it to the chassis.
5. Carefully spread the cables and remove the fan assembly.
6. Remove the jumper cables from the front connectors J9 and J10 of the backplane (Figure 5-19).
7. Install DSSI terminators (PN 12-28976-01) on J9 and J10.
8. Replace the fan assembly and cover.
9. Set the DSSI node ID switches for each ISE in that side of the enclosure (Table 5-4).
10. Push the inner chassis back in place and tighten the four front door screws. Make sure that all cables are dressed correctly.
11. Remove the two screws that hold the cable tray in place and slide the cable tray out.
12. Attach cables to all four connectors on the cable tray (Figure 5-20). Connectors P1 and P2 are for the rear ISEs. Connectors P3 and P4 are for the front ISEs.

Installing the SF3x Storage Enclosure in a DECarray Cabinet
5.5 Cabling the SF3x in the DECarray Cabinet

13. Replace the cable tray.
14. Replace the rear cover.
15. Attach the four DSSI cables to the DECarray I/O ports, using the table in Section A.5.

Figure 5-19 SF3x Backplane

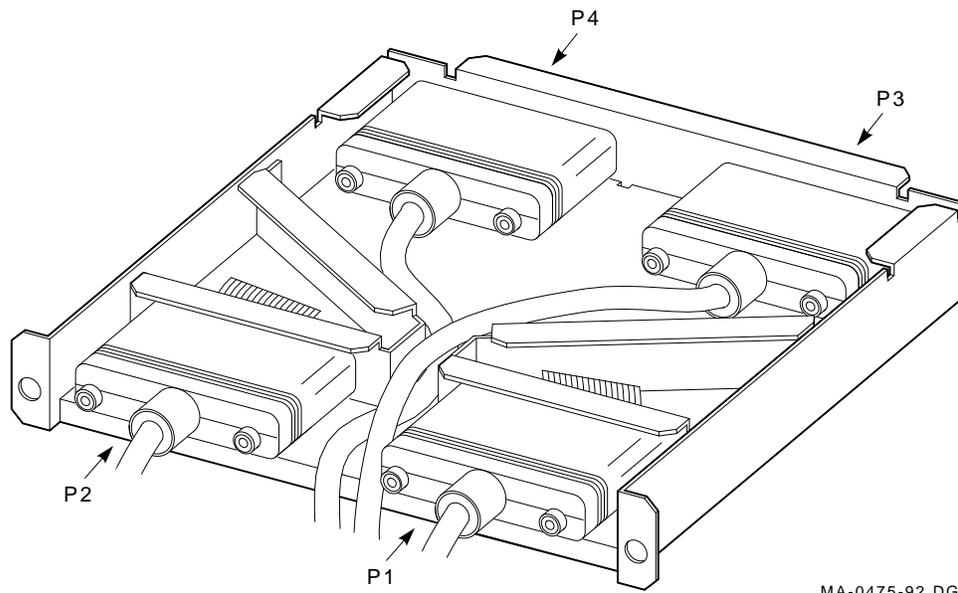


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Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.5 Cabling the SF3x in the DECarray Cabinet

Figure 5-20 Cabling an SF3x in Split-Bus Mode



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Installing the SF3x Storage Enclosure in a DECarray Cabinet
5.6 Powering Up the SF3x Enclosure

5.6 Powering Up the SF3x Enclosure

Follow these steps to apply power to a newly installed SF3x storage enclosure:

CAUTION

Ensure that the drive dc power switches on the front of the enclosure are in the out position.

1. Turn the ac power switch on the rear of the enclosure *on* or to the 1 position. If the green power supply fault LED is lit, refer to Chapter 9.
2. Press each of the drive dc power switches on the front of the SF3x enclosure, one at a time. If the green LED on the drive dc power switch does not light, refer to Chapter 9.
3. Observe the OCP indicators for each drive. If the Ready indicator is lit and no other LED comes on and stays on, the drive has passed the power-on self-test (POST). Should the Ready indicator not come on and the red Fault indicator come on, refer to Chapter 9.
4. Press each of the Ready buttons, one at a time. The Ready indicator should be on and stay on, with the Fault indicator remaining off. If a fault occurs, refer to Chapter 9.

Once these steps are done and the drive has passed POST, then—and only then—should you proceed to the next section.

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.6 Powering Up the SF3x Enclosure

5.6.1 Updating the System Configuration Sheet

Once the enclosure has been successfully installed, power has been applied, and the drives have passed POST, you are ready to update the system configuration sheet to add the new ISEs.

Refer to the *KFMSA Module Installation and User Manual* for complete details on filling out a system configuration sheet.

5.7 Labeling the DSSI Cables

Use the following colored labels on the magazine tape ISE front panel and all DSSI cables:

Label Color	I/O Port	SF3x Position
Blue	1	1 Rear
Red	2	1 Front
Yellow	3	2 Rear
Green	4	2 Front
Blue & white	5	3 Rear
Red & white	6	3 Front
Yellow & white	7	4 Rear
Green & white	8	4 Front
Blue, red	9	7 Rear
Yellow, green	10	7 Front
Blue, red & white	11	8 Rear
Yellow, green & white	12	8 Front

Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.7 Labeling the DSSI Cables

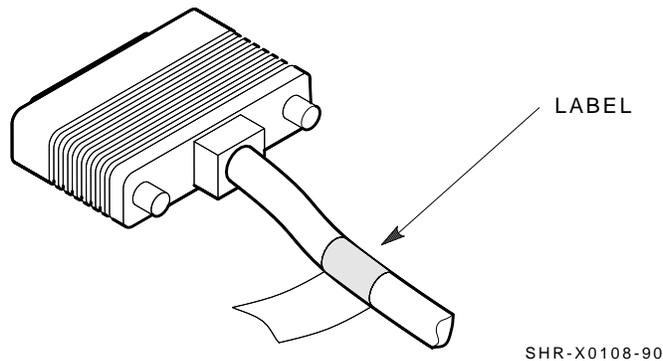
5.7.1 Filling Out the Labels

Follow the steps on the inside of the *SF Family Label Booklet* for instructions on how to fill out the labels for the DSSI cables and SF3x OCP.

5.7.2 Labeling the Cables

For each cable you just installed, place a label 4 inches behind the connector as shown in Figure 5-21.

Figure 5-21 Positioning a Label on a DSSI Cable



Installing the SF3x Storage Enclosure in a DECarray Cabinet

5.8 DSSI Subsystem Final Verification

5.8 DSSI Subsystem Final Verification

Once the hardware installation, cabling and labeling, and the powering up steps are complete, you are ready to configure the DSSI subsystem and check the correct operation of each ISE in the DECarray with the host system.

Refer to the *KFMSA Module Installation and User Manual* and the *TF857 Magazine Tape ISE Service Manual* for detailed information on the correct operation of each ISE. These manuals contain procedures for establishing the communications between the ISEs, the adapter module, and the system. They also contain step-by-step procedures for reconfiguring the system with its newly installed DSSI devices.

Refer to the manuals for the disk ISE and tape ISE for detailed information on the local programs in the ISEs.

If at any time you detect a failure, exit refer to Chapter 9.

Once the verification is complete, close the cabinet doors; turn the hex-Allen fasteners one quarter turn clockwise to lock. The system is ready to be turned over to the system manager.

5.9 Installing a SF36-xx Storage Enclosure in a SF2xx Cabinet

Note

The installation of these devices is identical to the installation of SF3x devices with the exception of the slide mounts and chassis retainers used. Preinstalled universal slide mounts and unique lockdown brackets are required to install SF36-xx storage enclosures.

1. Follow the hardware installation instructions in Section 5.4.2, step 1, to install the ac power cord in the SF2xx cabinet.
2. Using the hardware shown in (Figure 5–22), install both lockdown brackets on the front right side (for odd number mounting positions) or front left side (for even number mounting positions) of the enclosure extrusion tube. Use Table 5–5 to determine the correct lockdown bracket part number for each installation position.

Installing the SF3x Storage Enclosure in a DECarray Cabinet
5.9 Installing a SF36-xx Storage Enclosure in a SF2xx Cabinet

Table 5–5 SF3x Factory-Set DSSI Node IDs

	Upper Lockdown Bracket Part No.	Lower Lockdown Bracket Part No.
Odd No. Position Side	74-44472-04	74-44472-03
Even No. Position Side	74-44472-03	74-44472-04

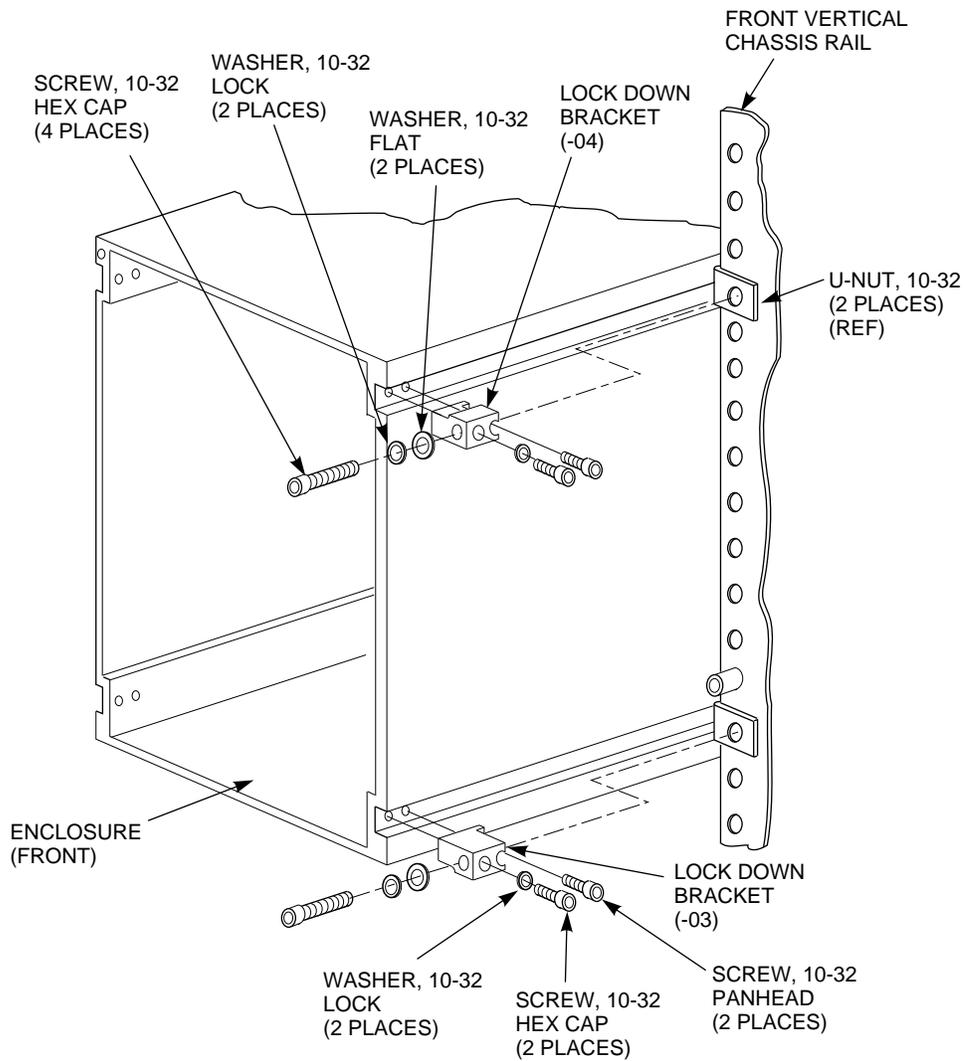
WARNING

A lifting device or three people are required to lift and position the storage enclosure in the cabinet. Failure to use a lifting device or sufficient personnel may result in injury and equipment damage.

3. With the lockdown bracket end facing away from the cabinet, lift the SF36-xx storage enclosure assembly up and into the universal slide mount. The upper and lower edges of the slide mount should mate with the grooves in the sides of the enclosure extrusion.
4. Push the storage enclosure all the way into the cabinet along the slide mount until the lockdown brackets contact the U-nuts preinstalled on the front cabinet rails.
5. Fasten the lockdown brackets to the cabinet rails by installing cap screws through the brackets and into the U-nuts, as shown in Figure 5–22.
6. Resume hardware installation with Section 5.4.2, step 4.

Installing the SF3x Storage Enclosure in a DECarray Cabinet
5.9 Installing a SF36-xx Storage Enclosure in a SF2xx Cabinet

Figure 5-22 Chassis Retainers (Applicable Only to SF36-xx Installation in an SF2xx Cabinet)



NOTE: TAPE DRIVE INTERNAL COMPONENTS NOT SHOWN FOR CLARITY.

CXO-3992A-MC

6

Installing the SF7x Storage Enclosure in a DECarray Cabinet

This chapter describes the add-on installation of the SF7x storage enclosure into a DECarray cabinet. These procedures assume that the DECarray cabinet previously has been correctly installed and configured.

The SF7x storage enclosure that you are installing may contain two or four RF7x disk ISEs. To determine if the SF7x contains two or four ISEs, open the front door of the DECarray cabinet and look at the front of the SF7x enclosure. If both sides of the enclosure contain an ISE, then the enclosure contains four ISEs (SF7x–JK variant). If there is an ISE on only one side of the SF7x enclosure, then that enclosure contains only two ISEs (SF7x–HK variant).

The following procedures are described in this chapter:

- Installing the SF7x Storage Enclosure (Section 6.1)
- Cabling the SF7x (Section 6.6)
 - Single-system configuration (Section 6.6.1)
 - DSSI VAXcluster configuration (Section 6.6.2)
 - Stripeset configuration (Section 6.6.3)
- Powering up the SF7x (Section 5.6)
- Labeling the DSSI cables and OCP (Section 5.7)
- Final verification (Section 6.9)

Only Digital Services or customer personnel that have been trained in ESD procedures should perform the installation.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

Table 6-1 lists the tools required to install the SF7x enclosure into the DECarray cabinet.

Table 6-1 SF7x Required Tool List

Description	Part Number
Lifting device	FC-10117-AC
#0 Phillips screwdriver	29-10991-00
#1 Phillips screwdriver	29-11001-00
#2 Phillips screwdriver	29-11005-00
1/8-inch slot screwdriver	29-10802-00
5/16-inch slot screwdriver	29-10960-00
1/8-inch hex key	29-26115-00
3/16-inch hex key	29-26118-00
11/32-inch nutdriver	29-10674-00

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.1 Installing the SF7x Storage Enclosure

6.1 Installing the SF7x Storage Enclosure

This section contains several major steps. The first step explains how to:

- Unpack, inspect for damage, and identify parts
- Determine where to install the SF7x enclosures
- Read and fill out the system configuration sheet

The next step explains how to install the SF7x enclosure itself:

- Prepare the DECarray cabinet to receive an SF7x storage enclosure
- Install the supporting hardware and SF7x, and set the DSSI ID switches
- Cable the SF7x storage enclosure to comply with the DSSI bus cabling conventions

The last step explains how to:

- Power up the SF7x enclosure, run the power-on self-test, and run the configuration programs
- Label all cables and operator control panels
- Verify the operation of the enclosure after a successful installation

Follow all these steps in the order they are presented, and do not skip any steps.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.1 Installing the SF7x Storage Enclosure

When the DECarray will operate in a single-system configuration, the SF7x enclosures in positions 1, 2, 4, and 7 operate in the through-bus mode. To check if the SF7x enclosure is in through-bus mode, look at the lower of the two LEDs on the OCP (labeled LED 2: SPLIT-BUS MODE). It should be off.

When the DECarray will operate in a DSSI VAXcluster configuration, *all* enclosures must be configured in the through-bus mode.

Positions 3 and 8 operate in the split-bus mode and require you to reconfigure their transition termination module (TTM). The procedure for doing this is presented later in this chapter.

To check if the SF7x enclosure is in split-bus mode, look at the lower of the two LEDs on the OCP (labeled LED 2: SPLIT-BUS MODE). It should be lit.

6.2 Unpacking the SF7x Storage Enclosure

Unpack the SF7x shipping container. The enclosure is shipped in an environmental barrier bag with desiccant.

Note

After unpacking, retain the container and all packing materials.

Examine the enclosure for physical damage. If you find *any* damage, do *not* attempt to install the enclosure. Notify your office immediately.

If there is no damage, then unpack all the boxes and bags, and identify all the parts by using Table 6-2.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.2 Unpacking the SF7x Storage Enclosure

Table 6–2 SF7x Kit Contents

Description	Quantity	Part Number
SF7x storage enclosure	1	SF7x–HK (2-drive) SF7x–JK (4-drive)
Slide mount assembly	1	– ¹
Weldment bracket (front top)	1	70–26052–01
Weldment bracket (front bottom)	1	70–26052–02
Shoulder screw, 10-32, 0.501	4	12–24007–01
Shoulder screw, 10-32, 0.438	6	12–24007–02
Lock washer, internal steel	10	90–06637–00
DSSI cable retainer	1	74–41302–01
Chassis retainer	2	74–35858–01
10-32 Phillips (SEMS)	4	12–21368–03
Machine screw, Phillips, 10-32, 0.500	2	90–06073–02
Machine screw, Phillips, 10-32, 1.5	2	90–06079–03
Lock washer, external steel	2	90–07651–00
AC power cord, 9-foot	1	17–00442–18
DSSI cables, 42-inch, box-to-box	1	BC21Q–3F
Owner’s manual	1	EK–SF7xS–OM
Installation guide	1	EK–SF2xx–IG
Label booklet	1	36–32882–01

¹The slide mount assembly comes assembled and does not have a single part number.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.3 Where to Install the SF7x Storage Enclosure

6.3 Where to Install the SF7x Storage Enclosure

Storage enclosures must be installed in the DECarray cabinet in ascending numerical order. Storage enclosure positions are numbered from 1 to 8 on the left and right chassis side rails. These numbers are visible only when the front or rear doors of the DECarray cabinet are open.

SF7x storage enclosures can only occupy positions 1, 2, 3, 4, 7, and 8.

In split-bus mode, the following drives are part of the same DSSI bus (note that split-bus mode is supported in the single-system configuration only):

1. Four drives in position 1 with the two left drives of position 3
2. Four drives in position 2 with the two right drives of position 3
3. Four drives in position 4 with the two left drives of position 8
4. Four drives in position 7 with the two right drives of position 8

Note

In a stripeset configuration, all SF7x storage enclosures must be in split-bus mode. Each DSSI bus is connected to two ISEs in each SF7x enclosure. Two DSSI adapter ports are required for each SF7x storage enclosure.

All SF7x storage enclosures must be in through-bus mode when the DECarray is in the DSSI VAXcluster configuration:

1. Four drives in position 1
2. Four drives in position 2
3. Four drives in position 3
4. Four drives in position 4
5. Four drives in position 7
6. Four drives in position 8

Installing the SF7x Storage Enclosure in a DECarray Cabinet
6.4 Checking the System Configuration Sheet

6.4 Checking the System Configuration Sheet

Locate the system configuration sheet. If you cannot locate this sheet or if the one that is available is either not filled out or filled out incorrectly, fill one out before continuing with the installation procedure. Blank configuration worksheets are provided in Appendix E.

Figures 6-1 and 6-2 show examples of a system configuration sheet.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.4 Checking the System Configuration Sheet

Figure 6-1 System Configuration Sheet (Single-System)

KFMSA/DSSI Single-host Configuration Sheet

KFMSA XMI Node # _____

Bus 1 DSSI ID # <u> 7 </u>	Bus 2 DSSI ID # <u> 7 </u>
---------------------------------	---------------------------------

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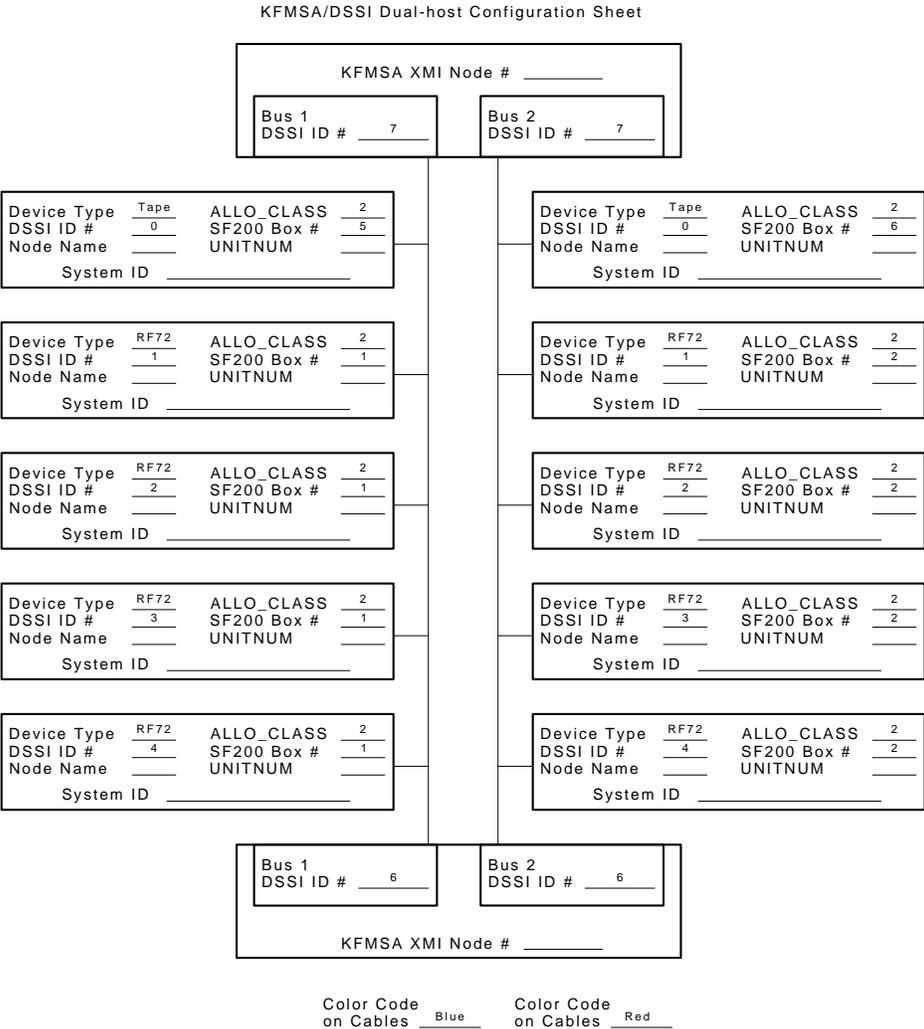
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SHR-X0109A-90

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.4 Checking the System Configuration Sheet

Figure 6-2 System Configuration Sheet (DSSI VAXcluster)



SHR-X0133A-90

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.5 Installation Procedure

6.5 Installation Procedure

This section describes the step-by-step procedures for installing an SF7x storage enclosure in DECarray positions 1, 2, 3, 4, 7, or 8.

Be sure to do the following:

- Follow each step in order, and do not skip any steps
- Leave sufficient room to perform the installation (approximately 1.5 meters to 1.8 meters [5 feet to 6 feet] front and rear of the DECarray)

WARNING

Observe all ESD precautions and procedures. An antistatic wrist strap is provided inside the DECarray front and rear doors.

WARNING

Do not attempt to pick up or support the SF7x by the handle in the rear of the enclosure. Doing so will injure the person attempting the installation or damage the power supply.

To maintain stability, extend only one SF7x storage enclosure or magazine tape ISE on the slide mounts at a time.

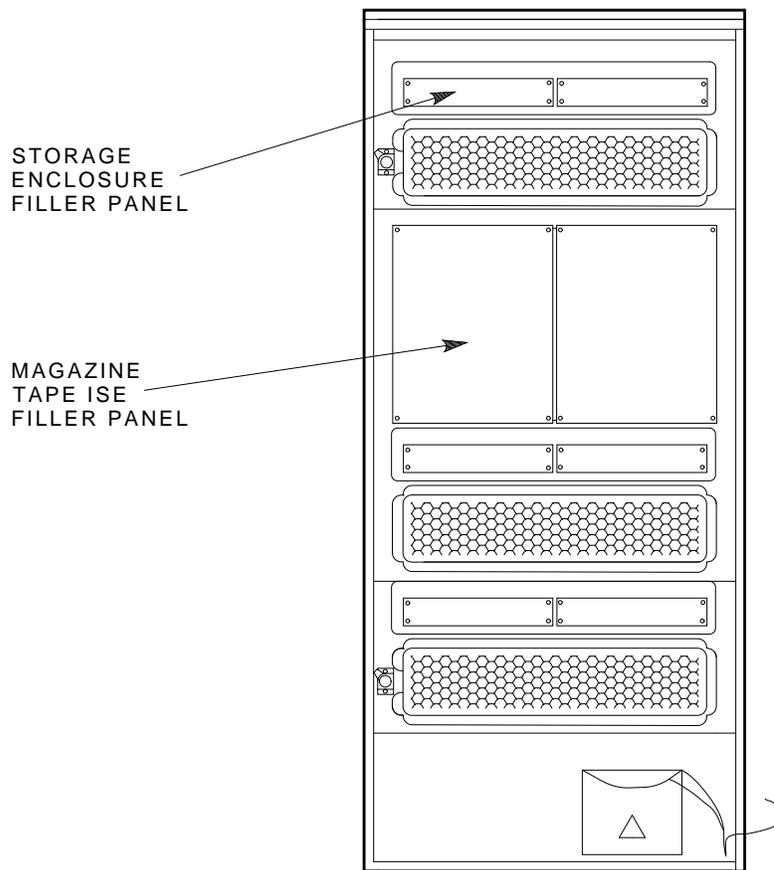
6.5.1 Preparing the DECarray Cabinet

The following procedure describes how to prepare the DECarray cabinet to receive the SF7x storage enclosure(s):

1. Place the SF7x to be installed to one side, in front of the DECarray cabinet.
2. Open the front and rear doors of the DECarray (Figure 6-3).
3. Remove the front door filler panel that corresponds to the position of the DECarray you are installing (Figure 6-3).

Installing the SF7x Storage Enclosure in a DECarray Cabinet 6.5 Installation Procedure

Figure 6-3 Removing a Filler Panel



MA-0418-92.DG

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.5 Installation Procedure

6.5.2 Hardware Installation Procedures

Perform the following steps completely and in the order presented.

CAUTION

Before performing the following steps, refer to the system documentation for the correct steps to perform an orderly shutdown of the system that the DECarray cabinet is connected to.

1. Install the ac power cord (Figure 6-4).
 - a. Go to rear of cabinet. Open the DSSI I/O panel by loosening the two captive screws on the right.

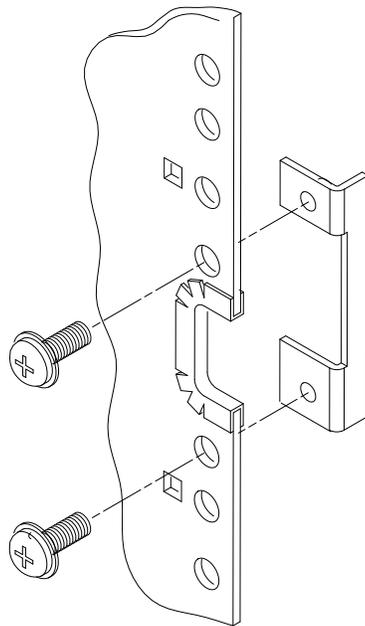
CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

- b. Locate the ac power cord retainer bracket at the level that you are installing the SF7x storage enclosure.
 - c. Loosen the lower screw of the ac retainer bracket. Remove the upper ac power cord retainer bracket screw and tilt the retainer 45 degrees. Then retighten the lower screw.
 - d. Place the ac power cord in the retainer space with the shrouded male plug end inside the cabinet side rail.
 - e. Leave approximately 0.6 meters (2 feet) of slack at the position location.
 - f. Loosen the lower screw and put the retainer bracket back to its original position. Then reinsert the upper screw and tighten both the top and bottom screws.
 - g. Connect the male end of the ac power cord to the first available outlet on the power controller.

Installing the SF7x Storage Enclosure in a DECarray Cabinet 6.5 Installation Procedure

Figure 6-4 AC Power Cord Retainer



SHR-X0137-90

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.5 Installation Procedure

2. Install the slide mount and associated hardware (Figure 6-5).

The slide mount has two parts; the *adjustable* end and the *slotted* end. The adjustable end has four screws that, when loosened, allow the slide mount to be placed in the cabinet and then extended to make a secure fit.

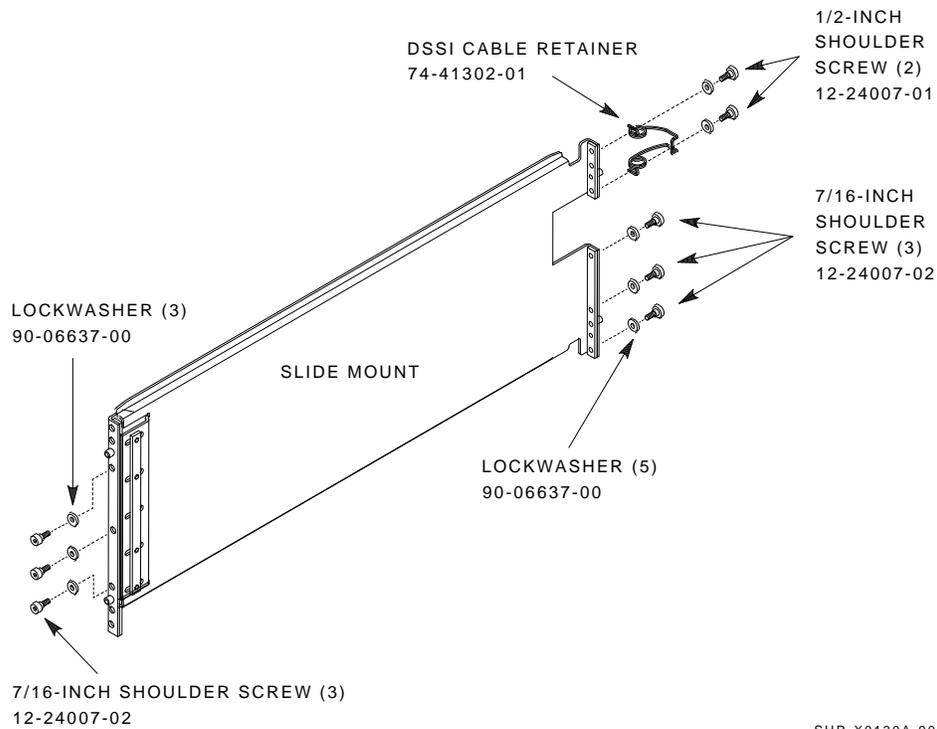
When installing the slide mount in positions 1, 3, 5, and 7, install the slotted end in the front left cabinet frame rail. When installing the slide mount in positions 2, 4, 6, and 8, install the adjustable end in the front right cabinet frame rail. The number for each position is labeled on the right and left cabinet frame rail on the front and the rear of the cabinet.

- a. Loosen the four screws in the adjustable end of the slide mount.
- b. From the front of the cabinet, place the slide mount in the cabinet so that the stamped UP and arrow signs are visible.
- c. Align the guide pin with the X stamped in the cabinet frame rail.
- d. Install one 7/16-inch shoulder screw and washer (hand-tighten) in the center threaded hole of the slide mount.
- e. Install the opposite end of the slide mount into the rear cabinet side rail. Again, align the guide pins with the X on the rail.
- f. Install one 7/16-inch shoulder screw and washer (hand-tighten) in the center threaded hole of the slide mount.
- g. At the rear of the cabinet, install two 1/2-inch shoulder screws with washers and the DSSI cable retainer clip. Note that the DSSI cable retainer clip must always point away from the center of the cabinet.
 - Place a 1/2-inch shoulder screw with a washer through the upper hole of the DSSI cable retainer clip and install the screw (hand-tighten) in the top threaded hole in the slide mount.
 - Place the other 1/2-inch shoulder screw with a washer through the lower hole of the DSSI cable retainer clip and install the screw (hand-tighten) in the threaded hole in the slide mount.

Installing the SF7x Storage Enclosure in a DECarray Cabinet 6.5 Installation Procedure

- h. While facing the rear of the cabinet, install two 7/16-inch shoulder screws with washers (hand-tighten)—one screw in the bottom threaded hole and the other in the threaded hole beneath the center rear shoulder screw (hand-tighten) previously installed.
- i. While facing the front of the cabinet, install two 7/16-inch shoulder screws with washers (hand-tighten)—one screw in the bottom threaded hole and the other in the threaded hole beneath the center rear shoulder screw (hand-tighten) previously installed.
- j. Tighten all shoulder screws.
- k. Tighten the four slide mount screws.

Figure 6-5 Installing the Slide Mount



Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.5 Installation Procedure

1. From the front of the cabinet, install the upper and lower weldment brackets on the cabinet side rail using 1/2-inch shoulder screws and washers (Figure 6-6).

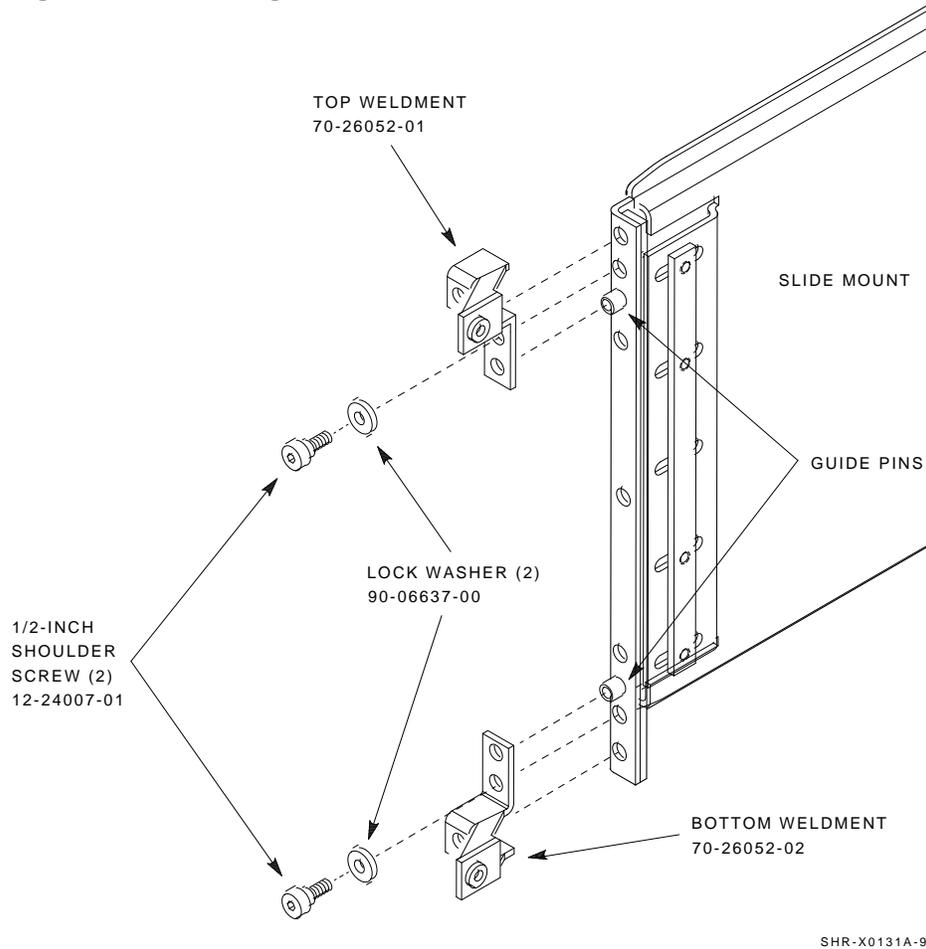
The center hole of the weldment bracket goes over the guide pin on the slide mount so the large end of the top weldment bracket points up and the large end of the bottom weldment bracket points down, regardless of whether you are installing the brackets on the front right or left cabinet frame rails.

Note

Do NOT tighten the screws at this time.

Installing the SF7x Storage Enclosure in a DECarray Cabinet 6.5 Installation Procedure

Figure 6-6 Installing the Weldment Brackets

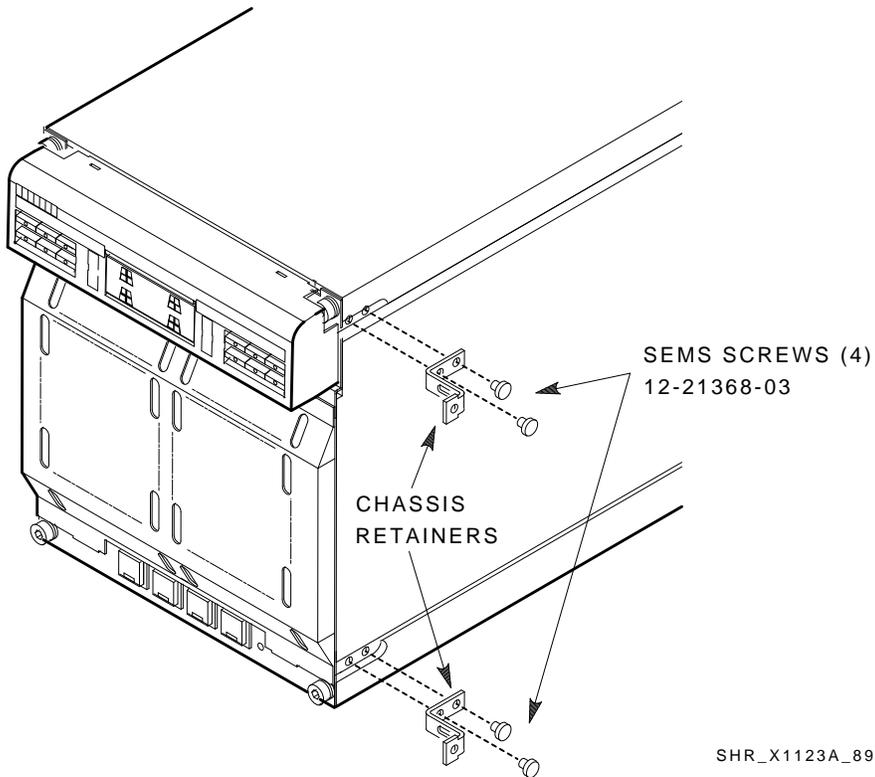


Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.5 Installation Procedure

3. Install the SF7x.
 - a. Install both chassis retainers on the front, right or left side of the SF7x extrusion tube (top and bottom, Figure 6-7).

Figure 6-7 Chassis Retainers



Installing the SF7x Storage Enclosure in a DECarray Cabinet

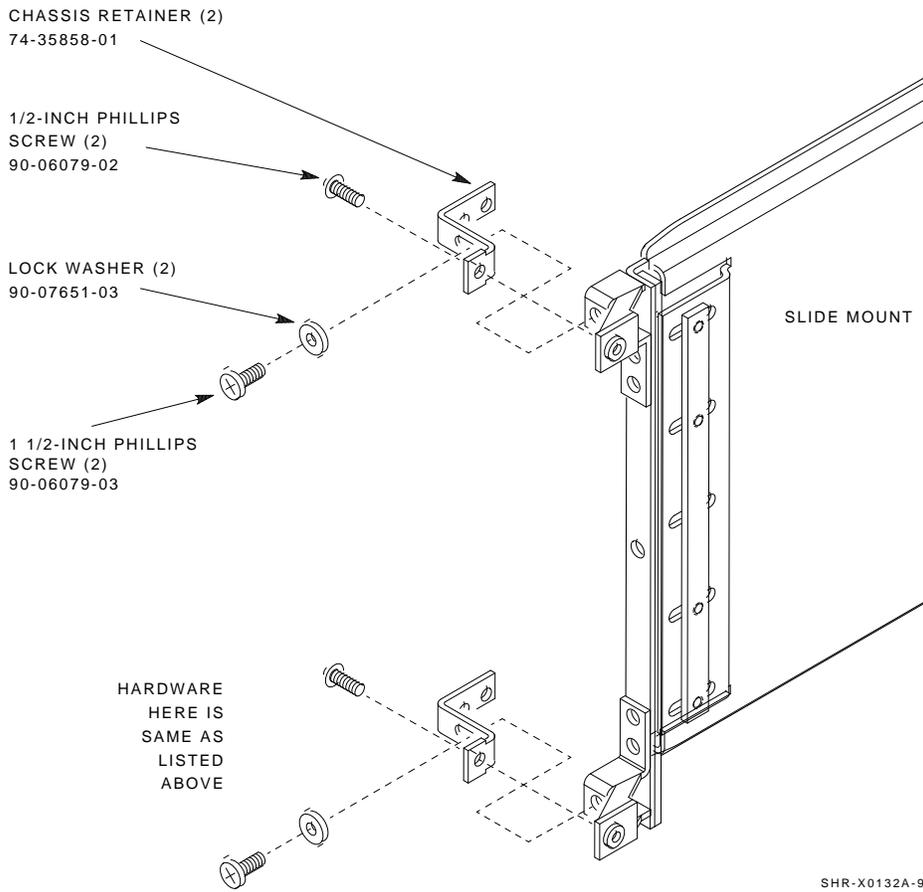
6.5 Installation Procedure

- b. At the front of the cabinet, hoist the SF7x assembly by using the lifting device or three people to lift the SF7x storage enclosure up and onto the slide mount. Push the assembly halfway into the cabinet.
- c. From the rear of the DECarray cabinet, pull the SF7x assembly all the way onto the slide mount until the chassis retainers contact the weldment brackets.
- d. Install and tighten the two outer weldment bracket screws, then install and tighten the two inner weldment bracket screws (Figure 6-8).
- e. Tighten the upper and lower weldment 1/2-inch shoulder screws and washers.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.5 Installation Procedure

Figure 6-8 Securing the SF7x to the Weldment Brackets



Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.5 Installation Procedure

4. Do the following if you are installing an SF7x in position 3 or 8 (single-system only):

CAUTION

To maintain stability, extend only one storage enclosure or magazine tape ISE on the slide mounts at a time.

- a. Loosen the four captive slide assembly screws. Slide the inner assembly out until the drawer locks in the service position.
- b. Push the inner assembly forward from the rear.

Note

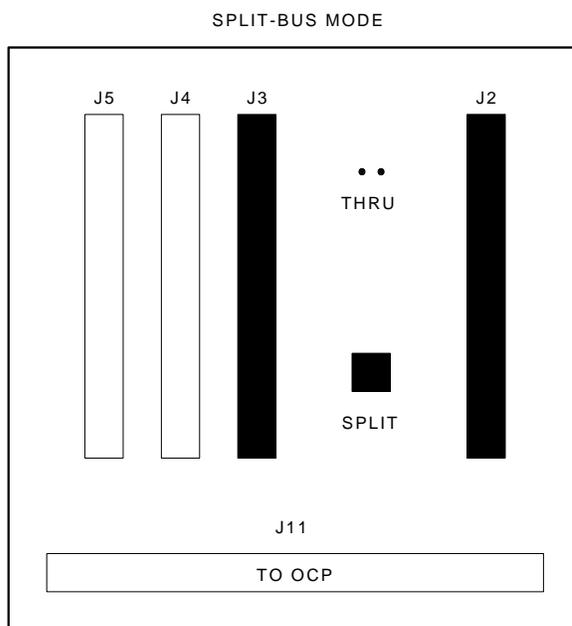
Do NOT completely remove the inner drawer assembly from the extrusion tube and extend only one at a time.

- c. Reconfigure the TTM for split-bus mode by first moving the small black jumper to the split-bus terminals, then moving cable connectors to the right pair of sockets (see Figure 6-9).
- d. Push the SF7x inner drawer back in, replace the front cover door, and tighten the four front door screws. To prevent pinching any cables, be sure that all cables are dressed correctly.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.5 Installation Procedure

Figure 6–9 Changing an SF7x to Split-Bus Mode

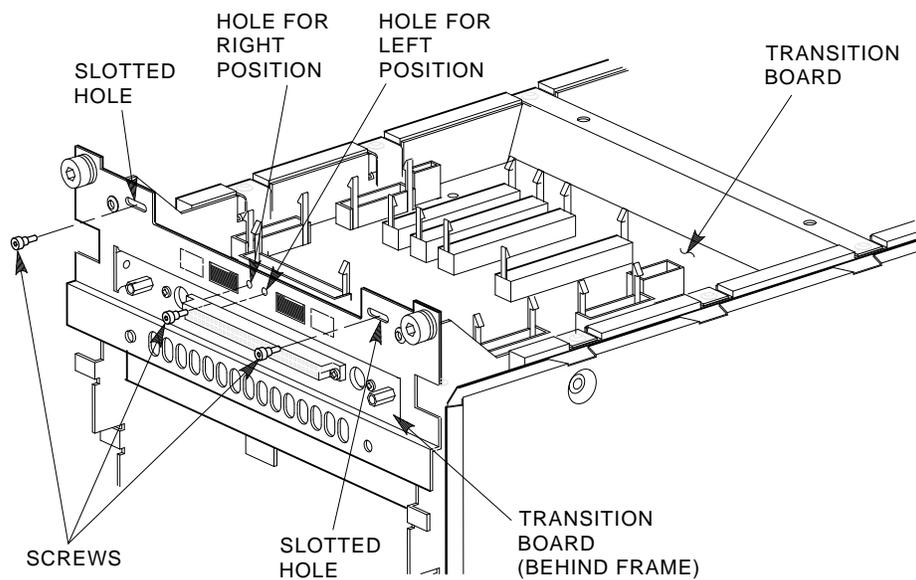


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Installing the SF7x Storage Enclosure in a DECarray Cabinet 6.5 Installation Procedure

5. Position the OCP.
 - a. Adjust the SF7x OCP mount (Figure 6-10) to the **LEFT** for positions 1, 3, and 7, and to the **RIGHT** for positions 2, 4, and 8.
 - b. Check that this and all other OCPs and magazine tape ISE fronts project through the front door of the DECarray correctly. It may be necessary to adjust cabinet door mounting at the door hinges.

Figure 6-10 Adjusting the OCP



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Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.5 Installation Procedure

6. Check the DSSI ID switches on the OCP.
Open the door on the front of the OCP. Ensure that the DSSI ID switches (the three rightmost switches) are set according to Figure 6-11. If they are not, then use a pointed instrument to set the switches to their correct configuration. Refer to Table 6-3.

Note

The leftmost switch (MSCP) should in the down or enabled position at all times, unless you are instructed to change it to the up or disabled position.

Table 6-3 DSSI ID Switch Settings (SF7x Only)

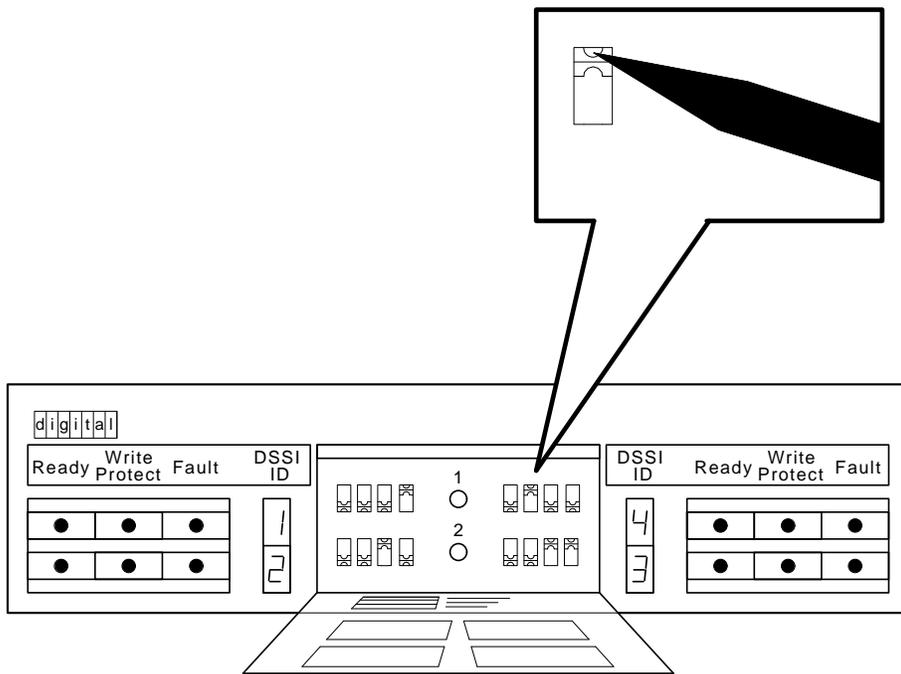
Positions 1, 2, 4, and 7 ¹	
Left Rear (LR)	001
Left Front (LF)	010
Right Front (RF)	011
Right Rear (RR)	100

Positions 3 and 8 (single-system only) ¹	
Left Rear (LR)	101
Left Front (LF)	110
Right Front (RF)	110
Right Rear (RR)	101

¹The switch settings for OCPs in these positions are 0 = down and 1 = up.

Installing the SF7x Storage Enclosure in a DECarray Cabinet 6.5 Installation Procedure

Figure 6–11 DSSI ID Switch Settings



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Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.5 Installation Procedure

CAUTION

Observe all ESD precautions and procedures. An antistatic wrist strap is provided inside the DECarray front and rear doors.

7. Install the OCP (Figure 6-12).

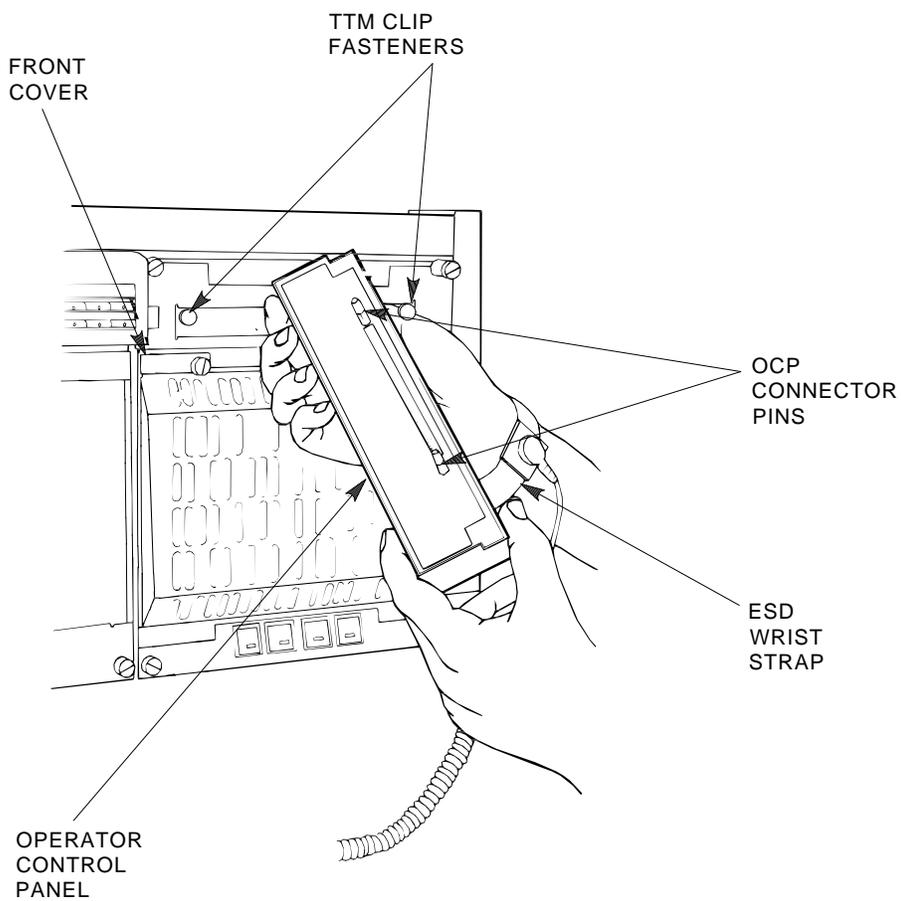
Note

Make sure that the power is off to the enclosure.

Make sure that ALL the buttons are in the out position.

Installing the SF7x Storage Enclosure in a DECarray Cabinet 6.5 Installation Procedure

Figure 6-12 Installing the OCP on the SF7x Enclosure



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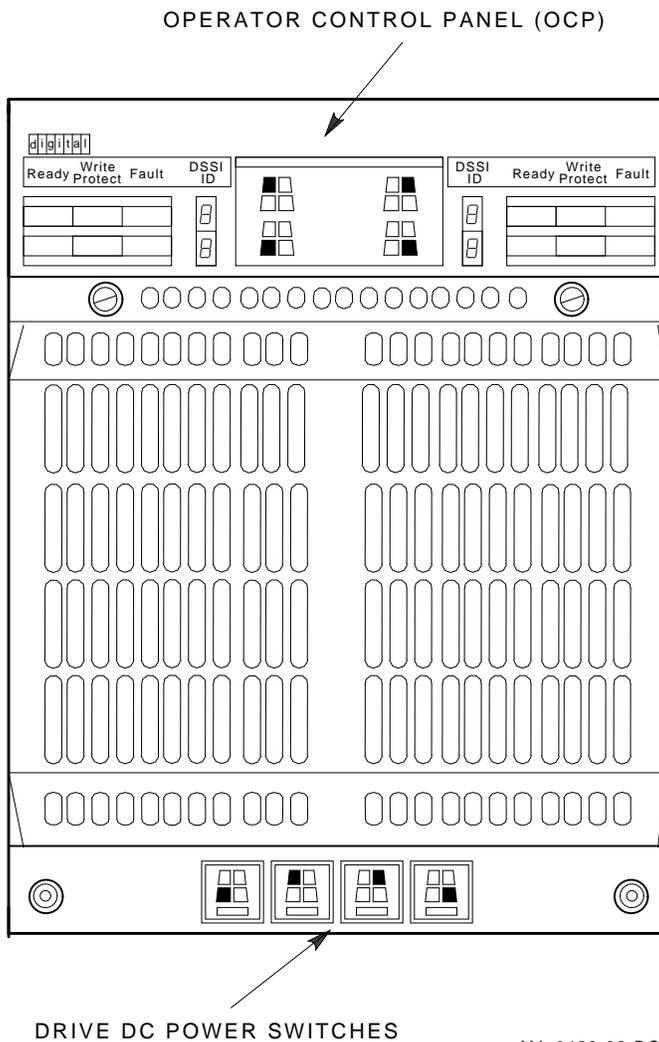
Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.5 Installation Procedure

8. At the front of the SF7x enclosure, make sure that all four drive dc power switches are out (Figure 6-13).
9. At the rear of the SF7x enclosure, make sure that the ac power switch is in off or in the 0 position (Figure 6-14).
10. Also check the select line voltage. Set it to the correct setting for your application.
11. At this time, connect the ac power cord to the SF7x enclosure.

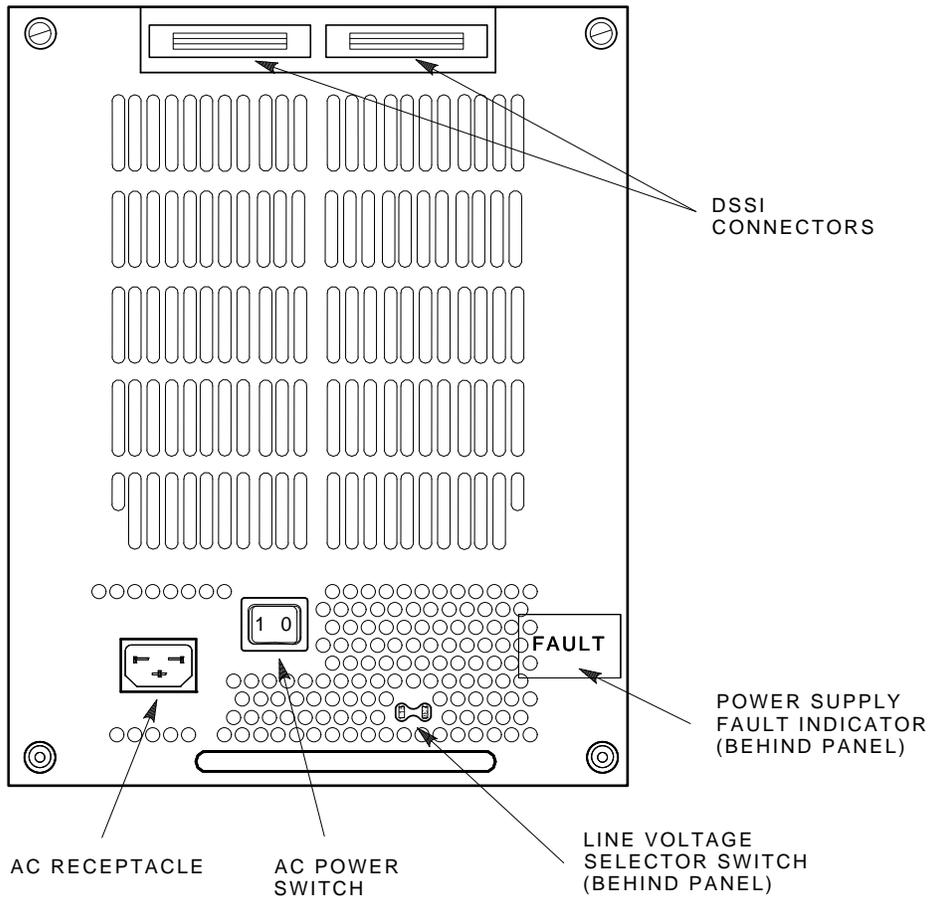
Installing the SF7x Storage Enclosure in a DECarray Cabinet 6.5 Installation Procedure

Figure 6-13 Drive DC Power Switches



Installing the SF7x Storage Enclosure in a DECarray Cabinet 6.5 Installation Procedure

Figure 6-14 AC Power Switch, Voltage Selections, and Power Cord



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Installing the SF7x Storage Enclosure in a DECarray Cabinet
6.6 Cabling the SF7x in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

This section describes the step-by-step procedure for cabling the SF7x storage enclosure to the existing DSSI bus configuration of the DECarray.

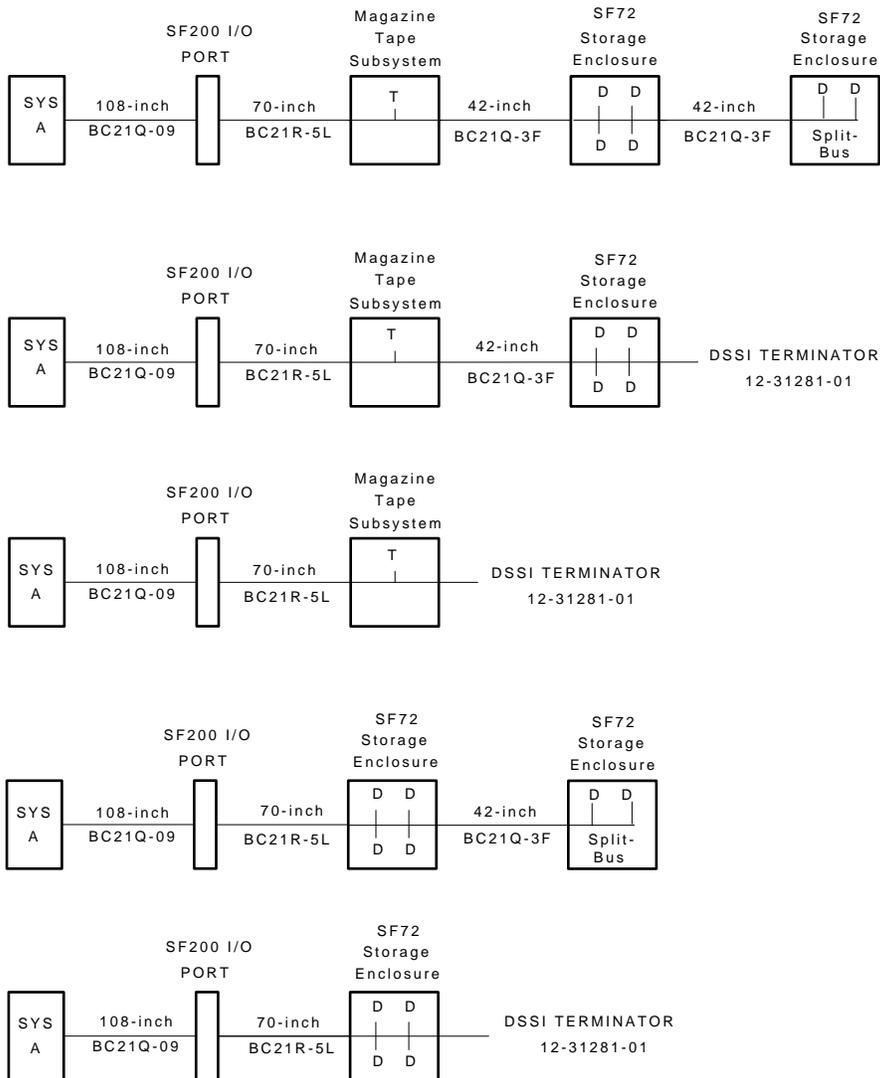
Refer to Section 6.6.1 for instructions on cabling the SF7x storage enclosure in a DECarray configured for single-system. Refer to Section 6.6.2 for instructions on cabling the SF7x storage enclosure in a DECarray configured for DSSI VAXcluster systems.

Once cabling of the DECarray is complete, each bus must be connected to match one of the following eight buses. Figure 6-15 shows the five possible single-system configurations, Figure 6-16 shows the three possible DSSI VAXcluster configurations, and Figure 6-17 shows two possible stripeset configurations.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

Figure 6-15 Single-System Bus Configurations

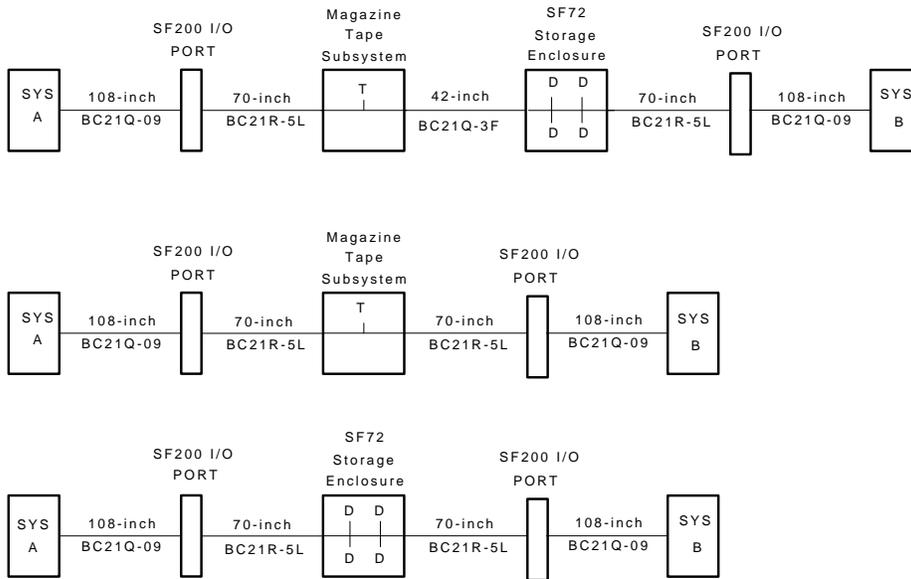


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Installing the SF7x Storage Enclosure in a DECarray Cabinet

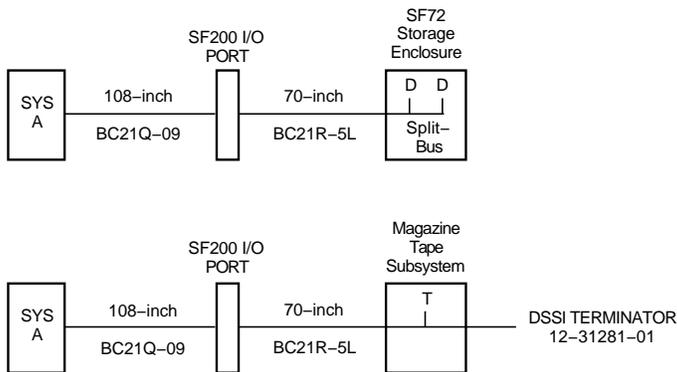
6.6 Cabling the SF7x in a DECarray Cabinet

Figure 6-16 DSSI VAXcluster Bus Configurations



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Figure 6-17 Stripset Bus Configurations



SHR-X0167A-91.RAGS

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

6.6.1 Single-System Configuration

Use the following procedures for cabling an SF7x storage enclosure in a DECarray configured for single-system.

The following procedures assume that all devices installed previous to a new installation of an SF7x storage enclosure are cabled in the single-system configuration.

6.6.1.1 Identifying DSSI Connectors on the System I/O Panel

The following procedure explains how to locate and identify the DSSI connections on the host system I/O panel.

Note

Before performing the following steps, refer to the system documentation for the correct procedure to perform an orderly shutdown of the systems that the DECarray is connected to.

Note

This procedure assumes that no storage enclosures are installed internally in the system cabinet. If storage enclosures are in the system cabinet, then one of the KFMSA modules in the system XMI backplane must be connected to those storage enclosures. Do NOT use this KFMSA module or its DSSI connections to connect the system to the DECarray. Do NOT count this KFMSA module in the following steps.

1. Open the system I/O panel on the system by removing the screws that secure the I/O panel to the system chassis. Let the panel swing down to its resting position.
2. Find the first KFMSA module installed in the XMI backplane of the system. It is the KFMSA module in the lowest numbered slot of the XMI backplane.
3. Follow the cabling from the backplane to the system I/O panel.
4. While viewing the front of the I/O panel, note that the DSSI connector on the left is KFMSA DSSI bus 2 and the DSSI connector on the right is KFMSA DSSI bus 1. These connectors should be labeled BLUE for bus 1 and RED for bus 2.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

5. Find the next KFMSA module installed in the XMI backplane of the system. It is the next KFMSA module after the KFMSA module in the lowest numbered slot of the XMI backplane.
6. Follow the cabling from the backplane to the system I/O panel.
7. While viewing the front of the I/O panel, note that the DSSI connector on the left is KFMSA DSSI bus 2 and the DSSI connector on the right is KFMSA DSSI bus 1. These connectors should be labeled YELLOW for bus 1 and GREEN for bus 2.

If these connectors are not labeled, label them now with the small colored labels in the *SF Family Label Booklet*.

For the single-system configuration, use the BLUE, RED, YELLOW, and GREEN labels only.

6.6.1.2 Cabling Position 1 or 2 with a Magazine Tape ISE

WARNING

Before performing the following steps, refer to the system documentation for the correct procedure to perform an orderly shutdown of the system that the DECarray is connected to.

The following steps are for cabling a storage enclosure in position 1 with a magazine tape ISE in position 5, or for cabling a storage enclosure in position 2 with a magazine tape ISE in position 6.

CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

1. Tighten the shipping screw in the rear, upper right corner of the magazine tape ISE.
2. Remove the DSSI terminator from the bottom DSSI connector on the rear of the magazine tape ISE.
3. Install a 42-inch DSSI cable (PN BC21Q-3F) in the bottom DSSI connector on the rear of the magazine tape ISE.
4. Loosen the shipping screw in the rear, upper right corner of the magazine tape ISE.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

5. Pull the inner assembly of the magazine tape ISE out to the head cleaning position (first mechanical stop).
6. Route the DSSI cable under the cable retainers on the right side of the cabinet. Cabling the magazine tape ISE with the inner assembly pulled out to the head cleaning position ensures that the correct cable slack is provided when the inner assembly is pushed back into the extrusion tube.
7. Push the inner assembly of the magazine tape ISE back into the extrusion tube.
8. Connect the 42-inch DSSI cable from the bottom DSSI connector on the rear of the magazine tape ISE to the rightmost DSSI connector on the rear of the SF7x storage enclosure.

Note

Perform the next step if this is the only storage enclosure to be installed on this particular DSSI bus. If not, then proceed to the cabling instructions for the next storage enclosure that has been installed.

9. Install a DSSI terminator in the leftmost DSSI connector at the rear of the SF7x.

CAUTION

Do not apply power to the storage enclosure at this time.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

6.6.1.3 Cabling Position 2 without a Magazine Tape ISE

CAUTION

Before performing the following steps, refer to the system documentation for the correct procedure to perform an orderly shutdown of the system that the DECarray is connected to.

The following steps are for cabling position 2 without a magazine tape ISE.

1. At the rear of the DECarray cabinet, locate the DSSI I/O panel at the bottom. Use a 3/16-inch flatblade screwdriver to loosen the two captive screws at the right of the panel.
2. Swing open and remove the panel from the cabinet frame.

CAUTION

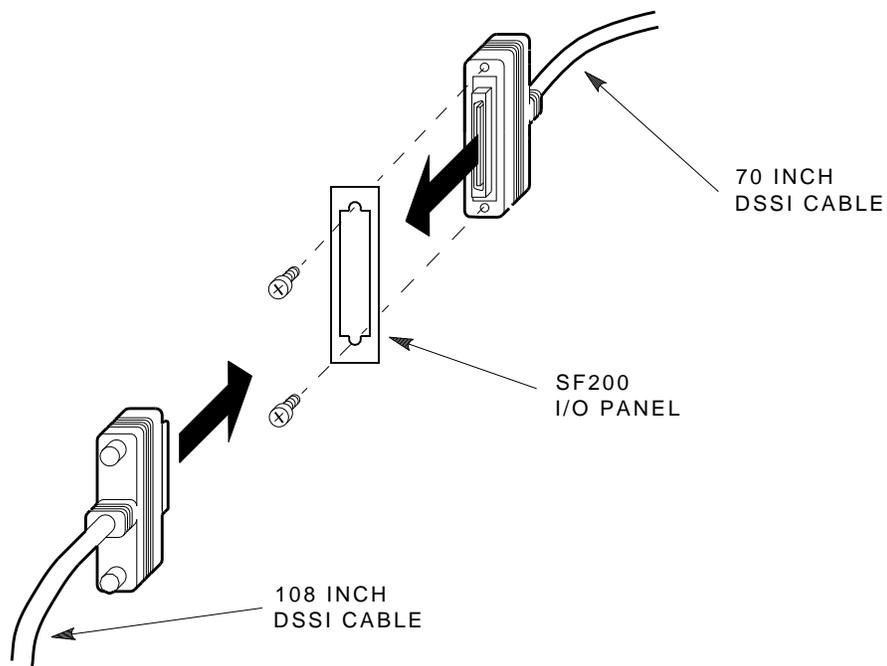
Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

3. Remove the two Phillips screws that hold the panel blank in port 2 of the I/O panel.
4. Install a 70-inch DSSI cable (PN BC21R-5L) in place of the panel blanks removed in the previous step. Secure this cable to the I/O panel with the two Phillips screws removed from the blank panel (Figure 6-18).
5. Plug the other end of this cable into the rightmost DSSI connector at the rear of the SF7x storage enclosure (Figure 6-19).
6. Route the DSSI cable under the cable retainers on the left side of the cabinet.
7. Plug a 108-inch DSSI cable (PN BC21Q-09) into the DSSI cable you just installed in port 2. Tighten the retainer screws with your fingers.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

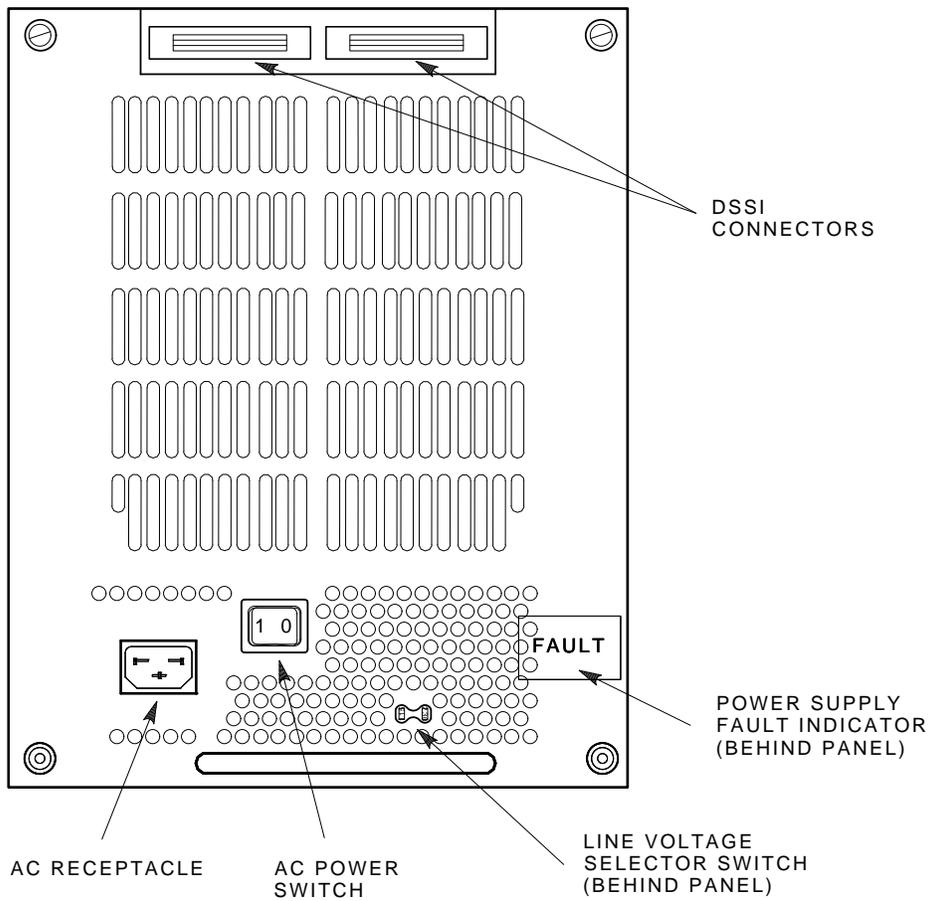
Figure 6-18 Installing the 70- and 108-Inch DSSI Cables



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Installing the SF7x Storage Enclosure in a DECarray Cabinet 6.6 Cabling the SF7x in a DECarray Cabinet

Figure 6-19 SF7x Storage Enclosure (rear view)



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Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

Note

The following step assumes that no storage enclosures are installed internally in the system cabinet. If there are storage enclosures installed in the system cabinet, then one of the KFMSA modules installed in the system XMI backplane must be connected to those storage enclosures. Do NOT use this KFMSA module or its DSSI connections to connect the system to the DECarray.

8. Plug the other end of the 108-inch DSSI cable into the appropriate port on the system I/O panel at the rear of the system cabinet. To determine which of the two DSSI connectors on the system I/O panel to connect to:
 - a. Locate the DSSI connectors on the system I/O panel labeled BLUE and RED.
 - b. From port 2 on the DECarray I/O panel, connect the 108-inch DSSI cable to the left DSSI connector (RED) of the first system I/O panel.

CAUTION

Do not apply power to the storage enclosure at this time.

Note

Perform the next step if this is the only storage enclosure to be installed on this particular DSSI bus. If not, then proceed to the cabling instructions for the next storage enclosure that has been installed.

9. Install a DSSI terminator in the leftmost DSSI connector at the rear of the SF7x (Figure 6-19).
10. Replace the DECarray I/O panel to its original position and secure it by tightening the two right captive screws.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

6.6.1.4 Cabling Position 4 or 7 (through bus)

CAUTION

Before performing the following steps, refer to the system documentation for the correct procedure to perform an orderly shutdown of the system that the DECarray is connected to.

The following steps are for cabling positions 4 and 7:

1. At the rear of the DECarray cabinet, locate the DSSI I/O panel at the bottom. Use a 3/16-inch flatblade screwdriver to loosen the two captive screws at the right of the panel.
2. Swing open and remove the panel from the cabinet frame.

CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

3. Remove the two Phillips screws that hold the panel blank in port 3 (for position 4) or port 4 (for position 7).
4. Install a 70-inch DSSI cable (PN BC21R-5L) in place of the panel blanks removed in the previous step. Secure this cable to the I/O panel with the two Phillips screws removed from the blank panel.
5. Plug the other end of the 70-inch DSSI cable into the rightmost DSSI connector at the rear of the SF7x storage enclosure, in either position 4 or 7.
6. Route this DSSI cable under the cable retainers on the appropriate side of the cabinet, left side for position 4, and right side for position 7.
7. Plug a 108-inch DSSI cable (PN BC21Q-09) into the port you just installed in the previous steps (Figure 6-18). Tighten the retainer screws on the 108-inch DSSI cable with your fingers.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

Note

The following step assumes that no storage enclosures are installed internally in the system cabinet. If there are storage enclosures installed in the system cabinet, then one of the KFMSA modules installed in the system XMI backplane must be connected to those storage enclosures. Do NOT use this KFMSA module or its DSSI connections to connect the system to the DECarray.

8. Plug the other end of the 108-inch DSSI cables into the appropriate port on the system I/O panel at the rear of the system cabinet. To determine which of the two DSSI connectors on the system I/O panel to connect to:
 - a. Locate the DSSI connectors on the system I/O panel labeled YELLOW and GREEN.
 - b. For port 3 on the DECarray I/O panel, connect the 108-inch DSSI cable to the right DSSI connector (YELLOW) of the first system I/O panel.
 - c. For port 4 on the DECarray I/O panel, connect the 108-inch DSSI cable to the right DSSI connector (GREEN) of the first system I/O panel.

CAUTION

Do not apply power to the storage enclosure at this time.

Note

Perform the next step if this is the only storage enclosure to be installed on this particular DSSI bus. If not, then proceed to the cabling instructions for the next storage enclosure that has been installed.

9. Install a DSSI terminator in the leftmost DSSI connector at the rear of the SF7x storage enclosure in position 4 or 7.
10. Replace the DECarray I/O panel to its original position and secure it by tightening the two right captive screws.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

6.6.1.5 Cabling Position 3 or 8 (Split-Bus)

CAUTION

Before performing the following steps, perform an orderly shutdown of the system that the DECarray is connected to.

The following steps describe cabling for positions 3 and 8. Note that positions 3 and 8 operate in split-bus mode for a single-system configuration.

1. Power down the SF7x storage enclosures in position 1 and 2 if you are installing in position 3. Power down the SF7x storage enclosures in position 4 and 7 if you are installing in position 8.
To power down an enclosure, first press the Ready button for each ISE, then press each drive dc power switch (one at a time), and finally at the rear of the enclosure press the ac power switch to 0.
2. Install a 42-inch DSSI cable (PN BC21Q-3F) to the rightmost DSSI connector on the rear of the SF7x storage enclosure in position 3 or 8 (Figure 6-19).
3. Route this DSSI cable under the cable retainers on the right side of the cabinet for position 3.
For position 8, route this cable above the SF7x storage enclosures in positions 7 and 8.
4. For position 3, connect this 42-inch DSSI cable to the leftmost DSSI connector at the rear of the SF7x in position 1.
For position 8, connect this 42-inch DSSI cable to the leftmost DSSI connector at the rear of the SF7x in position 7.
5. Install a 42-inch DSSI cable (PN BC21Q-3F) to the leftmost DSSI connector on the rear of the SF7x in position 3 or 8.
6. Route this DSSI cable under the cable retainers on the right side of the cabinet for position 3 and on the left side of the cabinet for position 8.
7. For position 3, connect this 42-inch DSSI cable to the leftmost DSSI connector at the rear of the SF7x in position 2. For position 8, connect this 42-inch DSSI cable to the leftmost DSSI connector at the rear of the SF7x in position 4.

CAUTION

Do not apply power to the storage enclosure at this time.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

6.6.2 DSSI VAXcluster Configuration

Use the following procedures for cabling an SF7x storage enclosure in an existing DECarray cabinet configured for DSSI VAXcluster systems.

The following procedures assume that all devices installed previous to a new installation of an SF7x storage enclosure are cabled in the DSSI VAXcluster configuration.

6.6.2.1 Identifying DSSI Connectors on the System I/O Panel

The following procedure explains how to locate and identify the DSSI connections on the system I/O panel.

CAUTION

Before performing the following steps, refer to the system documentation for the correct procedure to perform an orderly shutdown of the systems that the DECarray is connected to.

Note

This procedure assumes that no storage enclosures are installed internally in the system cabinet. If there are storage enclosures installed in the system cabinet, then one of the KFMSA modules installed in the system XMI backplane must be connected to those storage enclosures. Do NOT use this KFMSA module or its DSSI connections to connect the system to the DECarray. Do NOT count this KFMSA module in the following steps.

1. Open the system I/O panels on both systems by removing the screws that secure the I/O panel to the system chassis. Let the panel swing down to its rest position.
2. Find the first KFMSA module installed in the XMI backplane of each system. It is the KFMSA module in the lowest numbered slot of the XMI backplane.
3. Follow the cabling from the backplane to the system I/O panel.
4. While viewing the front of the I/O panel, note that the DSSI connector on the left is KFMSA DSSI bus 2 and the DSSI connector on the right is KFMSA DSSI bus 1. These connectors should be labeled BLUE for bus 1 and RED for bus 2.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

5. Find the next KFMSA module installed in the XMI backplane of each system. It is the next KFMSA module after the KFMSA module in the lowest numbered slot of the XMI backplane.
6. Follow the cabling from the backplane to the system I/O panel.
7. While viewing the front of the I/O panel, note that the DSSI connector on the left is KFMSA DSSI bus 2 and the DSSI connector on the right is KFMSA DSSI bus 1. These connectors should be labeled YELLOW for bus 1 and GREEN for bus 2.
8. Find the next KFMSA module installed in the XMI backplane of each system. It is the next KFMSA module after the KFMSA module in the previous steps.
9. Follow the cabling from the backplane to the system I/O panel.
10. While viewing the front of the I/O panel, note that the DSSI connector on the left is KFMSA DSSI bus 2 and the DSSI connector on the right is KFMSA DSSI bus 1. These connectors should be labeled BLUE/WHITE for bus 1 and RED/WHITE for bus 2.

If these connectors are not labeled, label them now with the small colored labels in the *SF Family Label Booklet*.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

6.6.2.2 Cabling Position 1 or 2 with a Magazine Tape ISE

WARNING

Before performing the following steps, refer to the system documentation for the correct procedure to perform an orderly shutdown of the systems that the DECarray is connected to.

The following steps are for cabling a storage enclosure in position 1 with a magazine tape ISE in position 5, or cabling a storage enclosure in position 2 with a magazine tape ISE in position 6.

CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

1. Tighten the shipping screw in the rear, upper right corner of the magazine tape ISE.
2. Disconnect the 70-inch DSSI cable (PN BC21R-5L) from the bottom DSSI connector of the magazine tape ISE.
3. Reconnect this 70-inch DSSI cable to the leftmost DSSI connector on the rear of the SF7x.
4. Install a 42-inch DSSI cable (PN BC21Q-3F) in the bottom DSSI connector of the magazine tape ISE.
5. Loosen the shipping screw in the rear, upper right corner of the magazine tape ISE.
6. Pull the inner assembly of the magazine tape ISE out to its head cleaning position. Cabling the magazine tape ISE with the inner assembly pulled out to the head cleaning position ensures that the correct cable slack will be provided when the inner assembly is pushed back into the extrusion tube.
7. Connect the 42-inch DSSI cable from the bottom DSSI connector of the magazine tape ISE to the rightmost DSSI connector of the SF7x enclosure.
8. Route the DSSI cable under the cable retainers on the right side of the cabinet.

Installing the SF7x Storage Enclosure in a DECarray Cabinet
6.6 Cabling the SF7x in a DECarray Cabinet

9. Push the magazine tape ISE back into the extrusion tube.

CAUTION

Do not apply power to the storage enclosure at this time.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

6.6.2.3 Cabling Positions 2 through 8

WARNING

Before performing the following steps, refer to the system documentation for the correct procedure to perform an orderly shutdown of the system that the DECarray is connected to.

The following steps are for cabling position 2 through 8 without a magazine tape ISE.

1. At the rear of the DECarray, locate the DSSI I/O panel at the bottom. Use a 3/16-inch flatblade screwdriver to loosen the two captive screws at the right of the panel.
2. Swing open and remove the panel from the cabinet frame.

CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

3. Determine which ports you are using for the installation. Refer to Table 6-4 to determine which proper ports for each storage enclosure position.

Table 6-4 DECarray I/O Ports for DSSI VAXcluster Configurations

Position	Left Port	Right Port	DSSI Bus Color
2	2	10	Red
3	3	11	Yellow
4	4	12	Green
7	5	13	Blue/White
8	6	14	Red/White

4. Remove the two Phillips screws that hold the panel blank over the ports for the enclosure you are installing.
5. Install two 70-inch DSSI cables (PN BC21R-5L) in place of the blanks you just removed in the previous step. Secure the DSSI cable to the I/O panel with the two Phillips screws removed from the blank panel.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

6. Plug the other end of the 70-inch DSSI cable from the right port into the rightmost DSSI connector at the rear of the SF7x.
7. Route this DSSI cable under the cable retainers on the right side of the cabinet.
8. Plug the other end of the 70-inch DSSI cable from the left port into the leftmost DSSI connector at the rear of the SF7x enclosure.
9. Route the DSSI cable under the cable retainers on the left side of the cabinet.
10. Plug two 108-inch DSSI cables (PN BC21Q-09) into the right and left ports and tighten the retainer screws with your fingers.

Note

The following step assumes that no storage enclosures are installed internally in the system cabinet. If there are storage enclosures installed in the system cabinet, then one of the KFMSA modules installed in the system XMI backplane must be connected to those storage enclosures. Do NOT use this KFMSA module or its DSSI connections to connect the system to the DECarray.

11. Plug the other end of the 108-inch DSSI cables into the appropriate ports on the system I/O panel at the rear of the system cabinet.

CAUTION

Do not apply power to the storage enclosure at this time.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.6 Cabling the SF7x in a DECarray Cabinet

6.6.3 Stripeset Configurations

Stripeset configurations start with a standard DSSI VAXcluster variant. To configure the system for stripesets, all SF7x enclosures must be set to split-bus mode.

Perform the following procedure on each SF7x enclosure in the DECarray cabinet.

CAUTION

To maintain stability, extend only one storage enclosure or magazine tape ISE on the slide mounts at a time.

- a. Loosen the four captive slide assembly screws. Slide the inner assembly out until the drawer locks in the service position.
- b. Push the inner assembly forward from the rear.

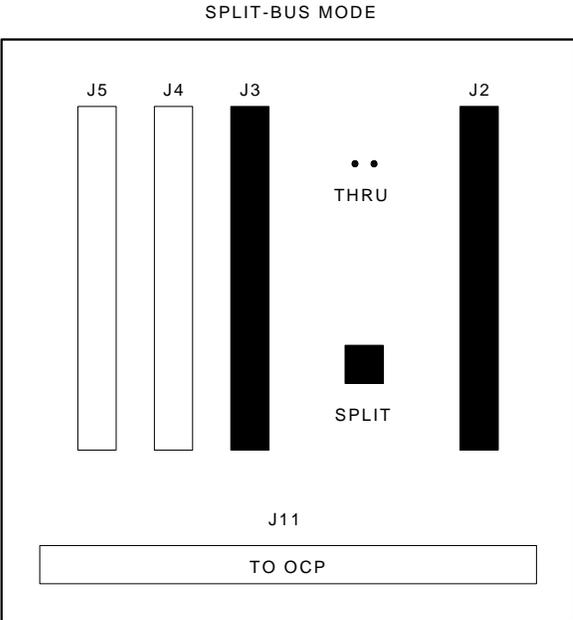
Note

Do NOT completely remove the inner drawer assembly from the extrusion tube and extend only one at a time.

- c. Reconfigure the TTM for split-bus mode by first moving the small black jumper to the split-bus terminals, then moving cable connectors to the right pair of sockets (see Figure 6-20).
- d. Push the inner drawer back in, replace the front cover door, and tighten the four front door screws. To prevent pinching any cables, be sure that all cables are dressed correctly.

Installing the SF7x Storage Enclosure in a DECarray Cabinet
6.6 Cabling the SF7x in a DECarray Cabinet

Figure 6-20 Changing an SF7x to Split-Bus Mode



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Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.7 Powering Up the SF7x

6.7 Powering Up the SF7x

Follow these steps to apply power to a newly installed SF7x storage enclosure:

CAUTION

Ensure that the drive dc power switches on the front of the enclosure are in the out position.

1. Turn the ac power switch on the rear of the enclosure *on* or to the 1 position. If the green power supply fault LED is lit, refer to Chapter 9.
2. Press each of the drive dc power switches on the front of the SF7x enclosure, one at a time. If the green LED on the drive dc power switch does not light, refer to Chapter 9.
3. Observe the OCP indicators for each drive. If the Ready indicator is lit and no other LED comes on and stays on, the drive has passed the power-on self-test (POST). Should the Ready indicator not come on and the red Fault indicator come on, refer to Chapter 9.
4. Press each of the Ready buttons, one at a time. The Ready indicator should be on and stay on, with the Fault indicator remaining off. If a fault occurs, refer to Chapter 9.

Once these steps are done and the drive has passed POST, then—and only then—should you proceed to the next section.

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.7 Powering Up the SF7x

6.7.1 Updating the System Configuration Sheet

Once the enclosure has been successfully installed, power has been applied, and the drives have passed POST, you are ready to update the system configuration sheet to add the new ISEs.

Refer to the *KFMSA Module Installation and User Manual* for complete details on filling out a system configuration sheet.

6.8 Labeling the DSSI Cables and OCP

For a single-system configuration, use the following colored labels on the SF7x OCP door, magazine tape ISE front panel, and all DSSI cables:

Label Colors	Connections
Blue	Port 1, positions 5, 1, 3
Red	Port 2, positions 6, 2, 3
Yellow	Port 3, positions 4, 8
Green	Port 4, positions 7, 8

For a DSSI VAXcluster configuration, use the following colored labels on the SF7x OCP door, magazine tape ISE front panel, and all DSSI cables:

Label Colors	Connections
Blue	Port 1, positions 5 and 1, port 9
Red	Port 2, positions 6 and 2, port 10
Yellow	Port 3, position 3, port 11
Green	Port 4, position 4, port 12
Blue with white stripe	Port 5, position 7, port 13
Red with white stripe	Port 6, position 8, port 14

Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.8 Labeling the DSSI Cables and OCP

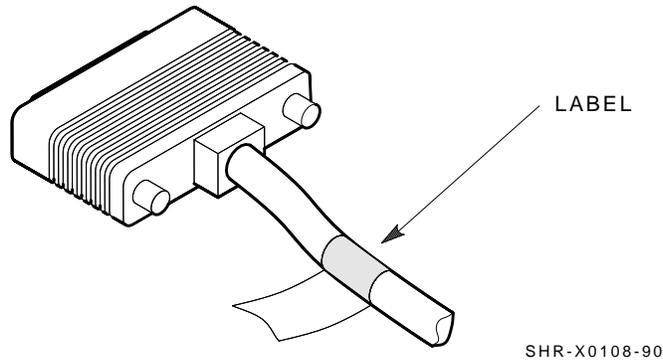
6.8.1 Filling Out the Labels

Refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out labels for the DSSI cables and SF7x OCP.

6.8.2 Labeling the Cables

For each cable installed, place a label four inches behind the connector as shown in Figure 6-21.

Figure 6-21 Placing a Label on a DSSI Cable

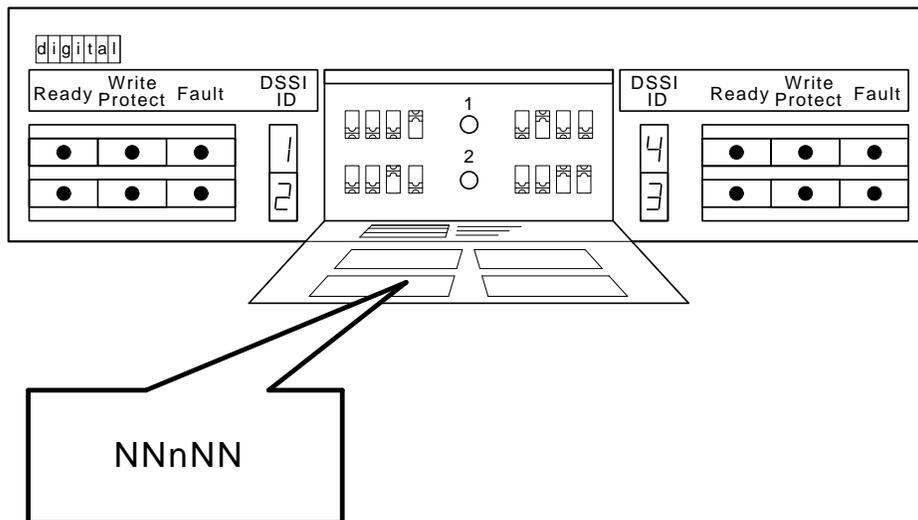


Installing the SF7x Storage Enclosure in a DECarray Cabinet 6.8 Labeling the DSSI Cables and OCP

6.8.3 Labeling the OCP

For each OCP on each SF7x installed, place a label as shown in Figure 6–22.

Figure 6–22 Placing a Label on the OCP Door



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Installing the SF7x Storage Enclosure in a DECarray Cabinet

6.9 Final Verification

6.9 Final Verification

Once the hardware installation, cabling and labeling, and the powering up steps are complete, you are ready to configure the DSSI subsystem and verify the correct operation of each ISE in the DECarray with the host system.

Refer to the *KFMSA Module Installation and User Manual* and the *TF857 Magazine Tape ISE Service Manual* for detailed information on the correct operation of each ISE. These manuals contain procedures for establishing the communications between the ISEs, the adapter module, and the system. They also contain step-by-step procedures for reconfiguring the system with its newly installed DSSI devices.

Refer to the manuals for the disk ISE and tape ISE for detailed information on the local programs in the ISEs.

If at any time you detect a failure, refer to Chapter 9.

Once the verification is complete, close the cabinet doors; turn the hex-Allen fasteners one quarter turn clockwise to lock. The system is ready to be turned over to the system manager.

6.10 Installation of SF74-xx Storage Enclosure in SF2xx Cabinet

Note

The installation of these devices is identical to the installation of SF7x devices with the exception of the slide mounts and chassis retainers used. Preinstalled universal slide mounts and unique lockdown brackets are required to install SF74-xx storage enclosures.

1. Follow the hardware installation instructions in Section 6.5.2, step 1, to install the ac power cord in the SF2xx cabinet.
2. Using the hardware shown in Figure 6–23, install both lockdown brackets on the front right side (for odd number mounting positions) or front left side (for even number mounting positions) of the enclosure extrusion tube. Use Table 6–5 to determine the correct lockdown bracket part number for each installation position.

Installing the SF7x Storage Enclosure in a DECarray Cabinet
6.10 Installation of SF74-xx Storage Enclosure in SF2xx Cabinet

Table 6–5 SF7x Factory-Set DSSI Node IDs

	Upper Lockdown Bracket Part No.	Lower Lockdown Bracket Part No.
Odd No. Position Side	74-44472-04	74-44472-03
Even No. Position Side	74-44472-03	74-44472-04

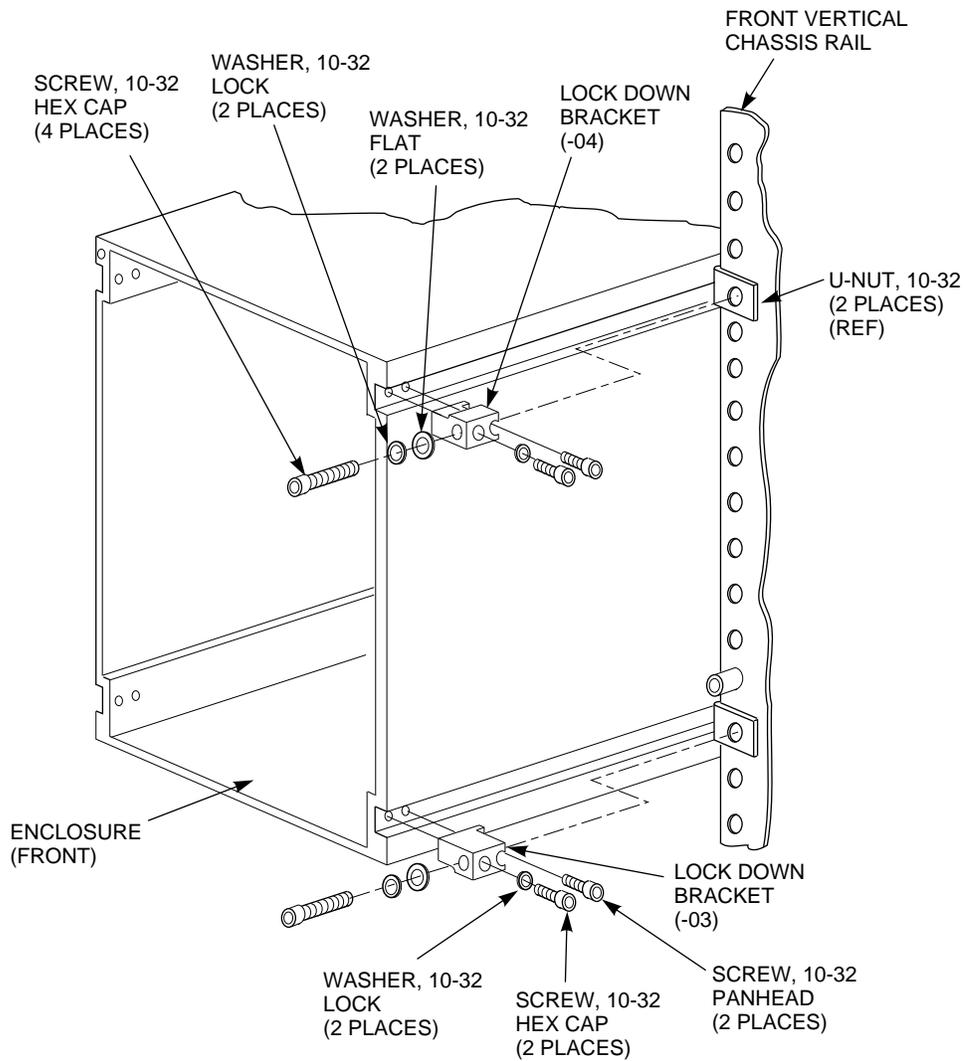
WARNING

A lifting device or three people are required to lift and position the storage enclosure in the cabinet. Failure to use a lifting device or sufficient personnel may result in injury and equipment damage.

3. With the lockdown bracket end facing away from the cabinet, lift the SF74-xx storage enclosure assembly up and into the universal slide mount. The upper and lower edges of the slide mount should mate with the grooves in the sides of the enclosure extrusion.
4. Push the storage enclosure all the way into the cabinet along the slide mount until the lockdown brackets contact the U-nuts preinstalled on the front cabinet rails.
5. Fasten the lockdown brackets to the cabinet rails by installing cap screws through the brackets and into the U-nuts, as shown in Figure 6–23.
6. Resume hardware installation with Section 6.5.2, step 4.

Installing the SF7x Storage Enclosure in a DECarray Cabinet
6.10 Installation of SF74-xx Storage Enclosure in SF2xx Cabinet

Figure 6-23 Chassis Retainers (Applicable Only to SF74-xx Installation in an SF2xx Cabinet)



NOTE: TAPE DRIVE INTERNAL COMPONENTS NOT SHOWN FOR CLARITY.

CXO-3992A-MC

7

Field Add-On with Universal Mounting Kit H229-AB/AC

This chapter describes how to install the chassis rails of the Universal Mounting Kit H229-AB/AC into a DECarray cabinet.

7.1 Chassis Rail Installation

To allow the length of the chassis rail to be adjusted to fit the cabinet, one end of the rail is extendible using a sliding rail bracket. Two round standoffs are used to locate the chassis rail along the vertical cabinet rails. The round standoffs are inserted into front and rear chassis rail locating holes to position the chassis rail while it is fastened to the cabinet.

Note

Standoff location holes, front and rear, both sides, are holes 18, 36, 57, and 75, as shown in Figure 7-1.

7.1.1 Chassis Rail Assembly

Before the chassis rail components can be mounted in the cabinet, they must be assembled. Assemble the chassis rail components as follows (see Figure 7-2):

1. Position the rail bracket against the chassis rail, as shown in the illustration.
2. Fasten the rail bracket to the chassis rail with the unbeveled nut bar and 4 screws, as shown. Leave the screws loose enough to allow the rail bracket to be moved along the chassis rail.
3. Install a U-nut in the groove near the end of each of the beveled nut bars. The flat side of the U-nuts must be on the *beveled* side of the nut bar.

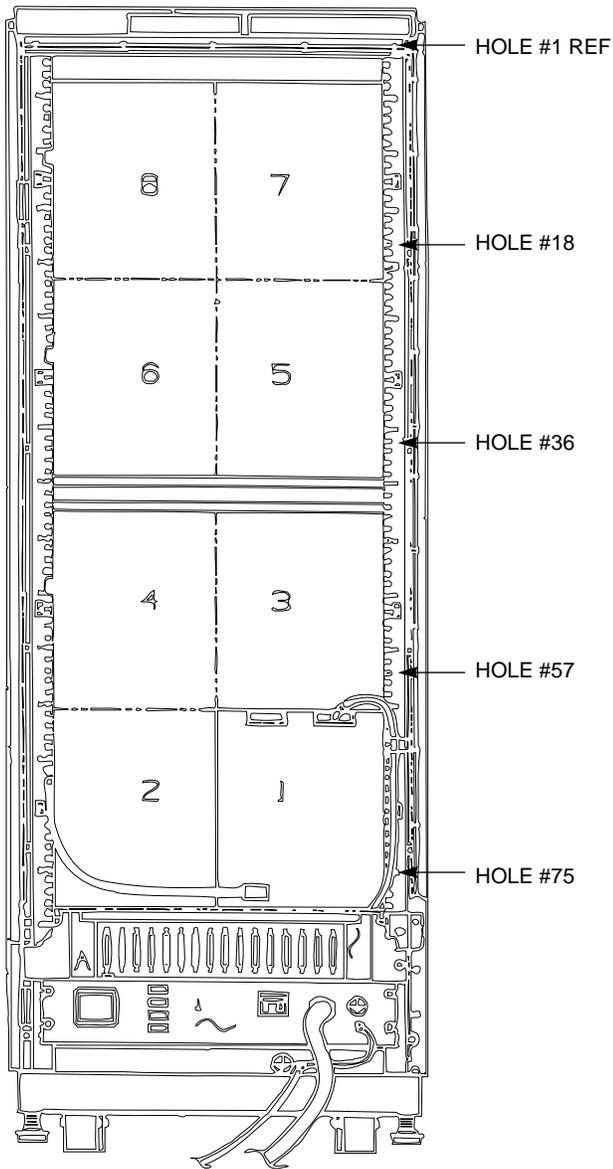
Field Add-On with Universal Mounting Kit H229-AB/AC

7.1 Chassis Rail Installation

4. Install the beveled nut bars on the chassis rail and rail bracket, using the round standoffs to hold them in place. The beveled side of the nut bars must face the flanges on the chassis rail and rail bracket.
5. The chassis rail assembly is now ready to be installed in the cabinet.

Field Add-On with Universal Mounting Kit H229-AB/AC
7.1 Chassis Rail Installation

Figure 7-1 Cabinet Frame Mounting Hole Locations for Round Standoffs



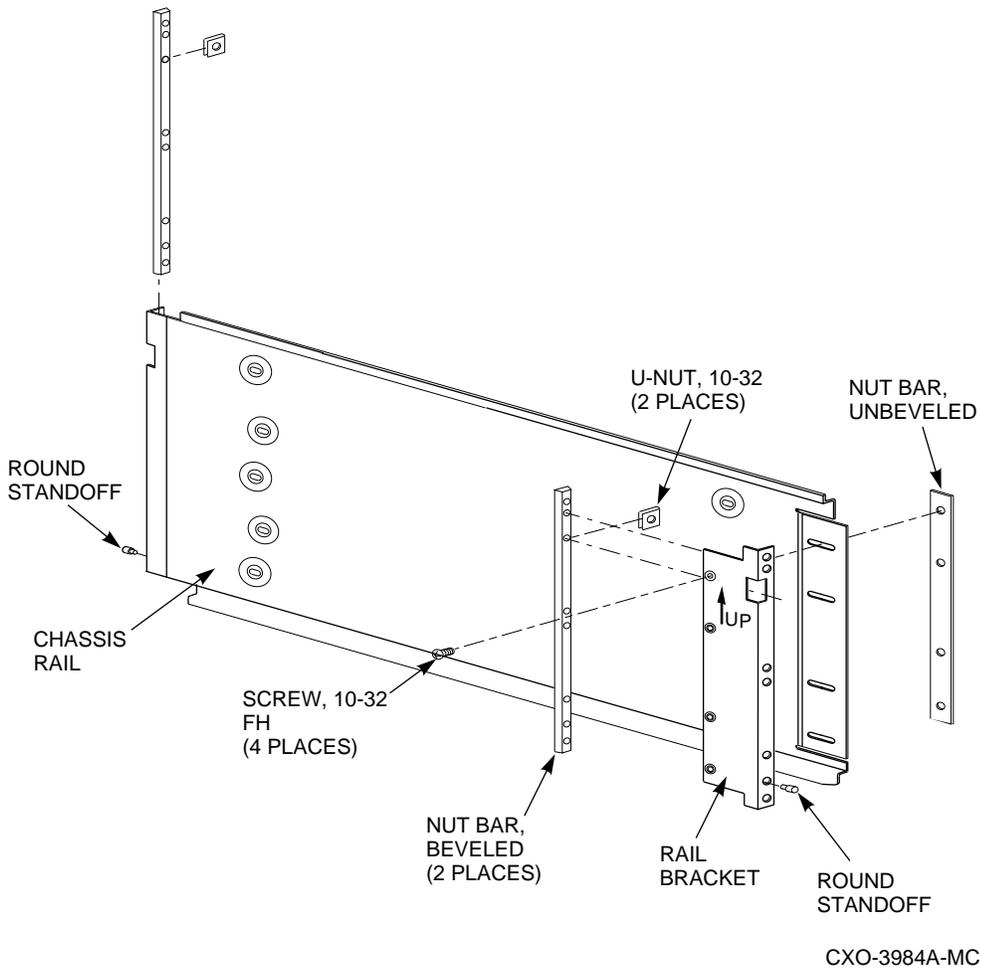
REAR VIEW

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Field Add-On with Universal Mounting Kit H229-AB/AC

7.1 Chassis Rail Installation

Figure 7-2 Chassis Rail Assembly



7.1.2 Right Position Chassis Rail Assembly Installation

Install the chassis rail assembly in the right position within the cabinet as follows (see Figure 7-3):

WARNING

Cabinet rail edges may be sharp and can slice or abrade skin or cable insulation.

Field Add-On with Universal Mounting Kit H229-AB/AC

7.1 Chassis Rail Installation

1. Turn the cabinet power off.

WARNING

While working in the cabinet interior, ac power must be removed from cabinet components. Failure to do so may result in personnel injury as a result of electric shock.

- a. Prior to performing any of the procedures in this chapter, remove ac power from cabinet components.
 - b. If the cabinet is installed and operating, spin down all disk drives and halt all tape drives in the cabinet.
 - c. At the rear of the storage array, turn off the power controller.
2. Determine the correct enclosure mounting locations and corresponding cabinet rail mounting holes for the chassis rail assembly. Refer to the chapter in this document pertaining to your specific cabinet configuration for this information.

Field Add-On with Universal Mounting Kit H229-AB/AC

7.1 Chassis Rail Installation

WARNING

Use care in supporting the chassis rail assembly. It is heavy and awkward to position within the cabinet. If possible, use two people to support and position the chassis rail assembly. The chassis rail assembly may cause personnel injury and equipment damage if dropped during installation.

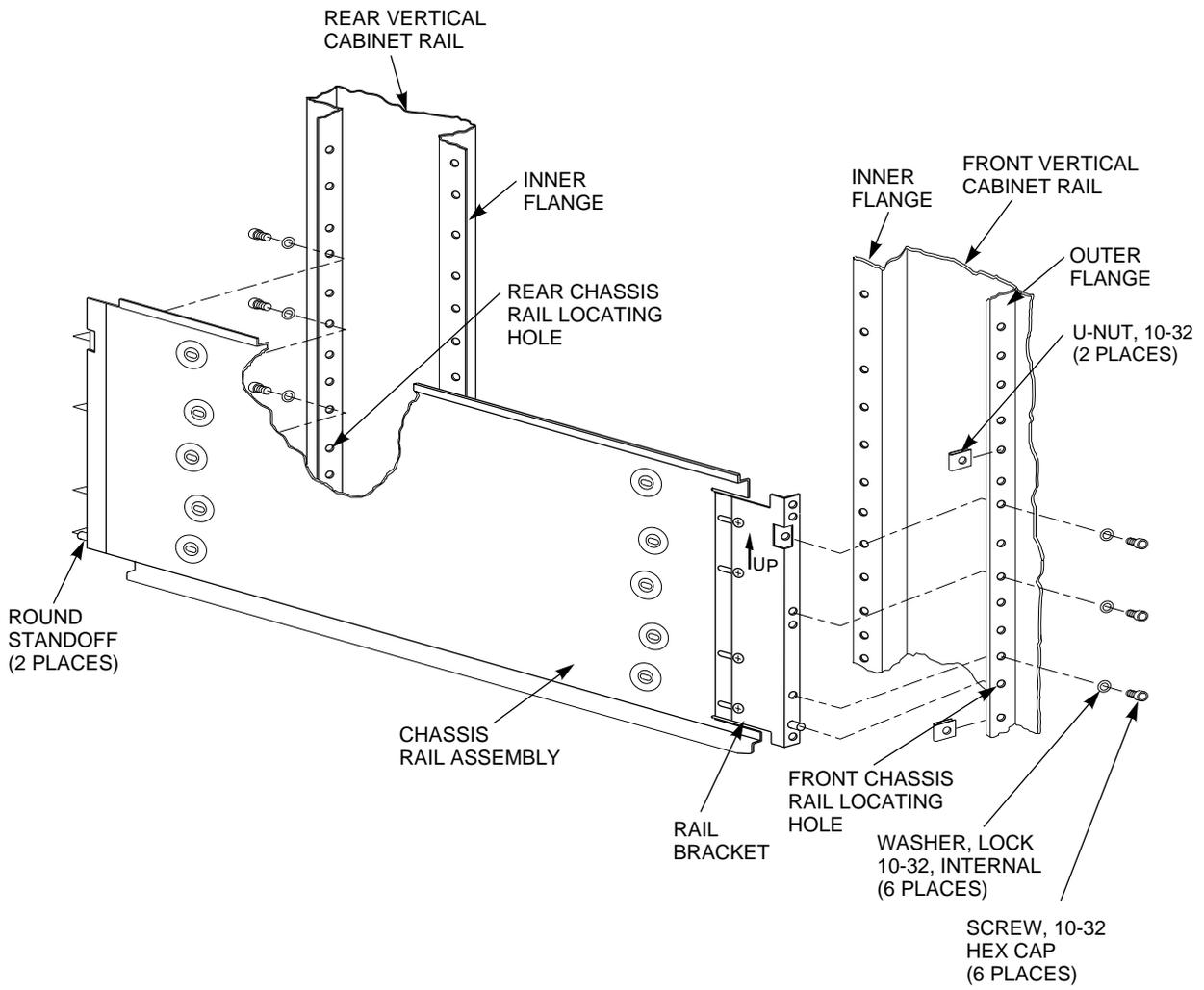
Note

To be sure of the proper alignment of the chassis rail assembly, use care to position the round standoffs in the correct front and rear chassis rail locating holes (see Figures 7-1 and 7-3).

3. From the front of the cabinet, position the chassis rail assembly at the correct mounting holes, as shown. Ensure that the rail bracket is positioned toward the front of the cabinet, and that the arrow on the rail bracket points up.
4. Insert the rear round standoff into the rear chassis rail locating hole.
5. Support the chassis rail against the rear vertical cabinet rail and maintain the rear round standoff in its locating hole. Extend the rail bracket to insert the front round standoff into its correct front chassis rail locating hole.
6. Fasten the rail bracket to the front vertical cabinet rail with its beveled nut bar and three screws, as shown.
7. Fasten the chassis rail to the rear vertical cabinet rail with its beveled nut bar and three screws, as shown.
8. Tighten the screws fastening the rail bracket to the chassis rail.
9. Install two U-nuts along the outer flange of the front vertical cabinet rail. Install one U-nut at the hole just above the front chassis rail locating hole and the other at the eighth hole below the locating hole.

Field Add-On with Universal Mounting Kit H229-AB/AC 7.1 Chassis Rail Installation

Figure 7-3 Right Position Chassis Rail Installation



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Field Add-On with Universal Mounting Kit H229-AB/AC

7.1 Chassis Rail Installation

7.1.3 Left Position Chassis Rail Assembly Installation

Note

Install the chassis rail assembly in the left mounting position only if an enclosure is also installed in the right position. The bezel openings are designed to allow a single enclosure to be installed only in the right position.

Install the chassis rail assembly in the left position within the cabinet as follows (see Figure 7-4):

WARNING

Cabinet rail edges may be sharp and can slice or abrade skin or cable insulation.

1. Turn the cabinet power off.

WARNING

While working in the cabinet interior, ac power must be removed from cabinet components. Failure to do so may result in personnel injury as a result of electric shock.

- a. Prior to performing any of the procedures in this chapter, remove ac power from cabinet components.
 - b. If the cabinet is installed and operating, spin down all disk drives and halt all tape drives in the cabinet.
 - c. At the rear of the storage array, turn off the power controller.
2. Determine the correct enclosure mounting locations and corresponding cabinet rail mounting holes for the chassis rail assembly. Refer to the chapter in this document pertaining to your specific cabinet configuration for this information.

Field Add-On with Universal Mounting Kit H229-AB/AC 7.1 Chassis Rail Installation

WARNING

Use care in supporting the chassis rail assembly. It is heavy and awkward to position within the cabinet. If possible, use two persons to support and position the chassis rail assembly. The chassis rail assembly may cause personnel injury and equipment damage if dropped during installation.

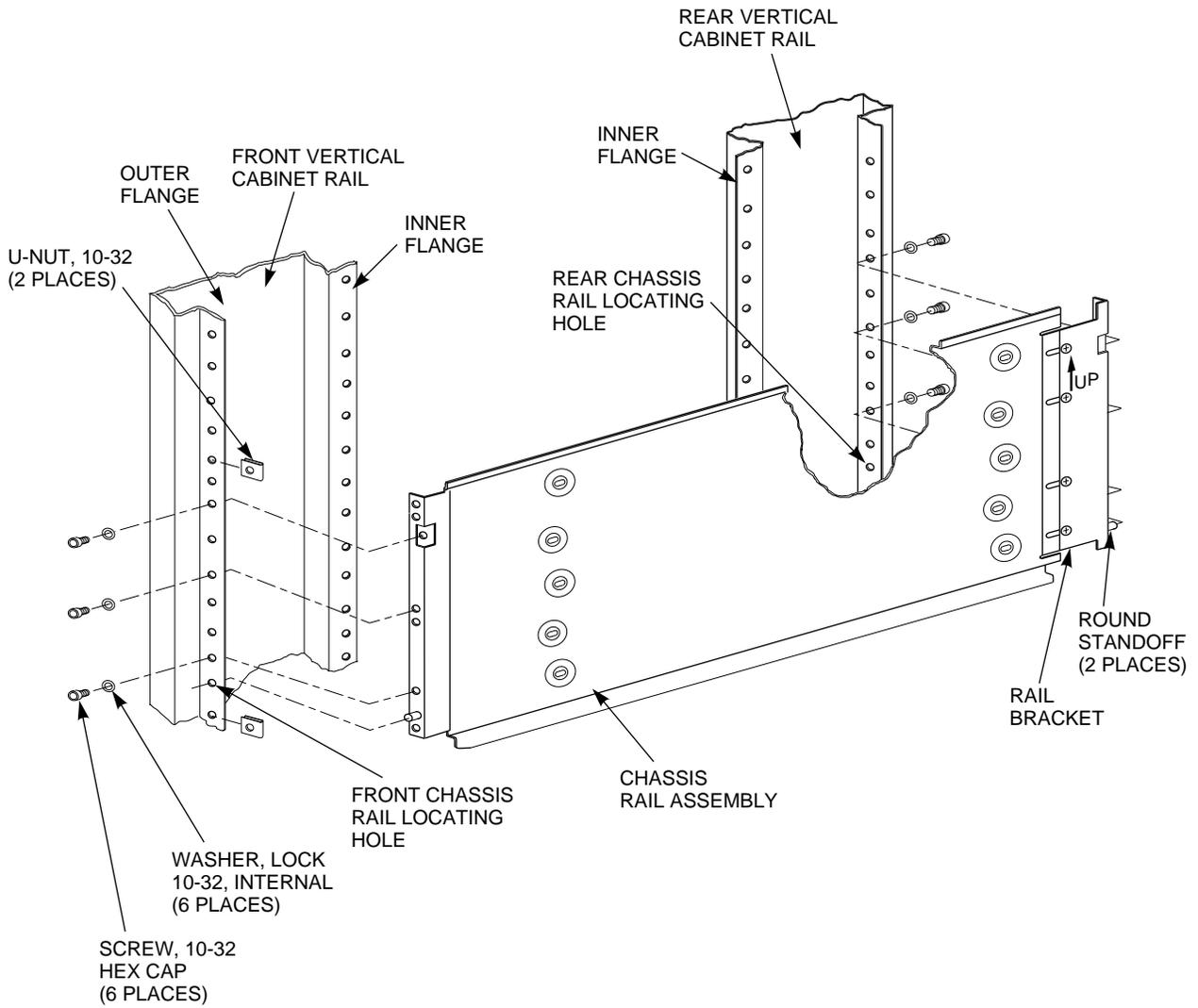
Note

To ensure proper alignment of the chassis rail assembly, use care to position the round standoffs in the correct front and rear chassis rail locating holes (see Figure 7-4).

3. From the rear of the cabinet, position the chassis rail assembly at the correct mounting holes, as shown. Ensure that the rail bracket is positioned toward the rear of the cabinet, and that the arrow on the rail bracket points up.
4. Insert the front round standoff into the front chassis rail locating hole.
5. Support the chassis rail assembly against the front vertical cabinet rail and maintain the front round standoff in its locating hole. Extend the rail bracket to insert the rear round standoff into its correct rear chassis rail locating hole.
6. Fasten the rail bracket to the rear vertical cabinet rail with its beveled nut bar and three screws, as shown.
7. Fasten the chassis rail to the front vertical cabinet rail with its beveled nut bar and three screws, as shown.
8. Tighten the screws fastening the rail bracket to the chassis rail.
9. Install two U-nuts along the outer flange of the front vertical cabinet rail. Install one U-nut at the hole just above the front chassis rail locating hole and the other at the eighth hole below the locating hole.

Field Add-On with Universal Mounting Kit H229-AB/AC
7.1 Chassis Rail Installation

Figure 7-4 Left Position Chassis Rail Assembly Installation



CXO-3986A-MC

Field Add-On with Universal Mounting Kit H229-AB/AC
7.2 Mounting the Storage Enclosure

7.2 Mounting the Storage Enclosure

Once the chassis rail is installed in the cabinet, the enclosure can be mounted on it. Mount the enclosure to the chassis rail as follows:

Note

The lock down brackets are mirror images of each other, and they are identified as the -03 and -04 versions. They must be installed with the orientation shown in the illustration.

1. Install the the two lock down brackets on the side of the enclosure near the front end, as shown in either 7-5 or 7-6. Figure 7-5 shows the installation for the right mounting position, and Figure 7-6 shows the installation for the left mounting position.

WARNING

Use two persons to lift the enclosure. The unit is heavy and awkward to lift. Failure to use two persons to lift the enclosure may result in injury or damage to equipment.

2. From the front of the cabinet and using two persons, position the enclosure such that the machined grooves in the side of the enclosure mate with the upper and lower edges of the chassis rail.

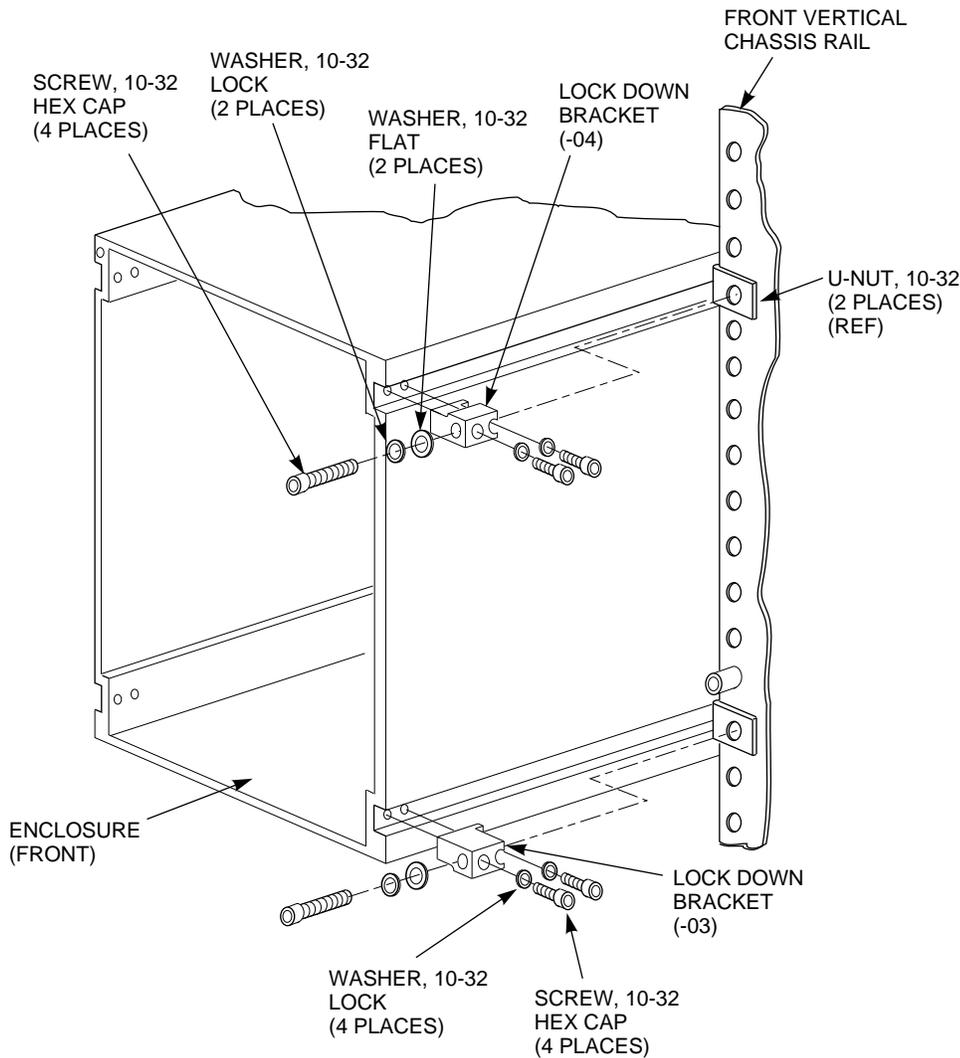
CAUTION

Use care when sliding the enclosure into the cabinet. Do not allow the enclosure to pull or pinch cables that may be routed through the cabinet interior. Failure to use care when mounting the enclosure may result in equipment damage.

3. Slide the enclosure onto the chassis rail until the lockdown brackets contact the U-nuts on the front vertical cabinet rail.
4. Fasten the lock down brackets to the front vertical chassis rail with two hex cap screws, as shown in Figure 7-5 or 7-6.

Field Add-On with Universal Mounting Kit H229-AB/AC
7.2 Mounting the Storage Enclosure

Figure 7-5 Right Position Enclosure Mounting

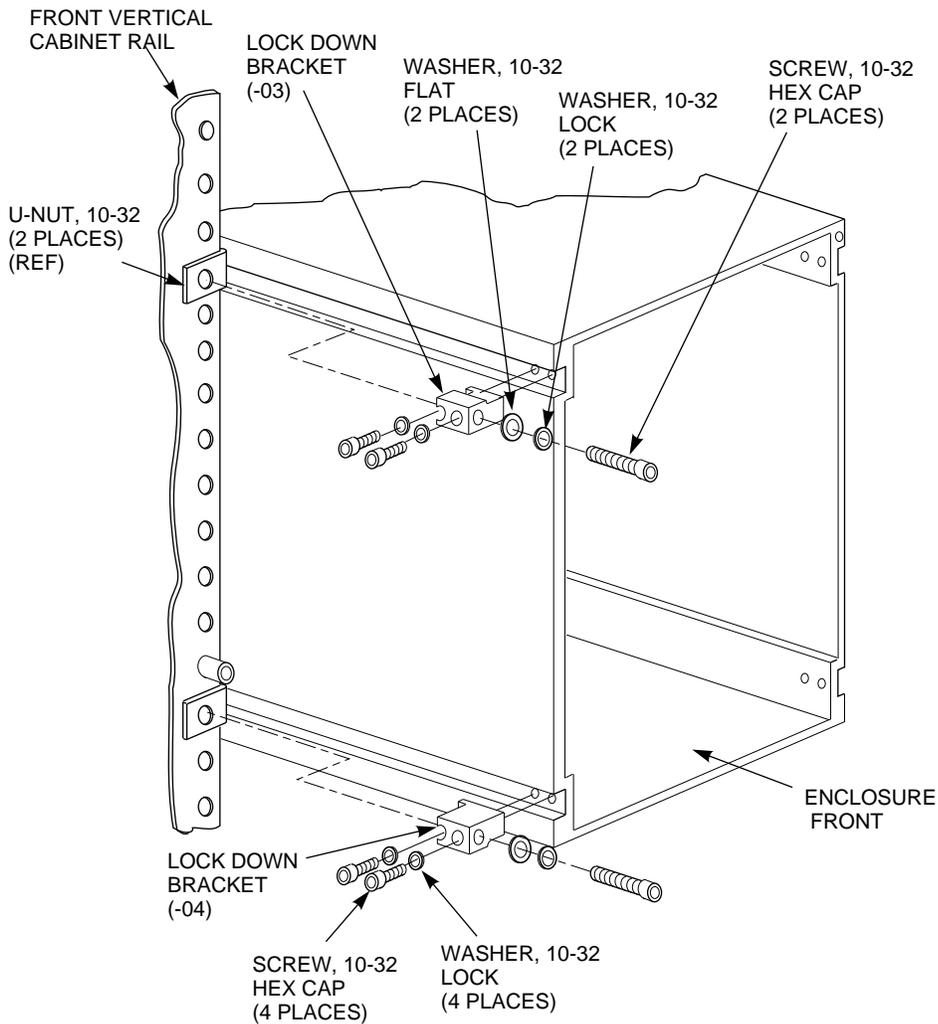


NOTE: TAPE DRIVE INTERNAL COMPONENTS NOT SHOWN FOR CLARITY.

CXO-3987A-MC

**Field Add-On with Universal Mounting Kit H229-AB/AC
7.2 Mounting the Storage Enclosure**

Figure 7-6 Left Position Enclosure Mounting



NOTE: TAPE DRIVE INTERNAL COMPONENTS NOT SHOWN FOR CLARITY.

CXO-3988A-MC

8

Installing the Magazine Tape ISE in a DECarray Cabinet

This chapter describes how to install the magazine tape ISE in a DECarray cabinet. The following procedures are described:

- Installing the TF8x7 Storage Enclosure (Section 8.1)
- Cabling (Section 8.2)
 - Single-system configuration (Section 8.2.1)
 - DSSI VAXcluster configuration (Section 8.2.2)
- Power-up (Section 8.3)
- Labeling (Section 8.4)
- Final verification (Section 8.5)

One or two magazine tape ISEs can be installed in the DECarray cabinet.

Only Digital Customer Services and other installing personnel that have been trained in ESD procedures can use the procedures in this chapter.

Installing the Magazine Tape ISE in a DECarray Cabinet

Table 8-1 lists the tools required to install the magazine tape ISE into the DECarray cabinet.

Table 8-1 Magazine Tape ISE Required Tool List

Description	Part Number
#0 Phillips screwdriver	29-10991-00
#1 Phillips screwdriver	29-11001-00
#2 Phillips screwdriver	29-11005-00
1/8-inch slot screwdriver	29-10802-00
5/16-inch slot screwdriver	29-10960-00
1/8-inch hex key	29-26115-00
3/16-inch hex key	29-26118-00
11/32-inch nutdriver	29-10674-00

Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

8.1 Installing the TF8x7 Storage Enclosure

The magazine tape ISE that you are installing contains a tape ISE and the tape cartridge loader assemblies.

This section contains several major steps. The first step explains how to:

- Unpack, inspect for damage, and identify parts
- Determine where to install the magazine tape ISE
- Read and fill out the system configuration sheet

The next step explains how to install the magazine tape ISE itself:

- Prepare the array cabinet to receive a magazine tape ISE
- Install the supporting hardware and magazine tape ISE, and set the DSSI node ID switches
- Cable the magazine tape ISE to comply with the DSSI bus cabling conventions

The last step explains how to:

- Power up the magazine tape ISE, run the power-on self-test, and run the configuration programs
- Label all cables and operator control panels
- Verify the operation of the enclosure after a successful installation

Follow all the steps in the order they are presented, and do not skip any steps.

The first step is to unpack the shipping container (see Section 8.1.1).

Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

8.1.1 Unpacking the Magazine Tape ISE

The magazine tape ISE is shipped in an environmental barrier bag with desiccant, the container, and all packing materials.

Note

After unpacking, retain the container and all packing materials.

Examine the subsystem for physical damage. If you find *any* damage, do *not* attempt to install the subsystem. Notify your office immediately.

If there is no damage, then unpack all the boxes and bags, and identify all the parts by using Table 8-2.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

Table 8–2 Magazine Tape ISE Kit Contents

Description	Quantity	Part Number
Magazine tape ISE	1	ISE specific
Hardware mounting assembly	1	ISE specific
Slide mount assembly	1	– ¹
Weldment bracket (front top)	1	70–26052–01
Weldment bracket (front bottom)	1	70–26052–02
Shoulder screw, 10-32, 0.500	4	12–24007–01
Shoulder screw, 10-32, 0.438	6	12–24007–02
Lock washer, internal steel	10	90–06637–00
DSSI cable retainer	1	74–41302–01
Chassis retainer	2	74–35858–01
10-32 Phillips (SEMS)	4	12–21368–03
Machine screw, Phillips, 0.500	2	90–06073–02
Machine screw, Phillips, 1.5	2	90–06079–03
Lock washer, external steel	2	90–07651–00
AC power cord, 8-foot	1	17–00442–03
DSSI cables, 42-inch, box-to-box	1	BC21Q–3F
Owner’s manual	1	EK–SF72S–OM
Installation guide	1	EK–SF2xx–IG
Owner’s manual	1	ISE specific
Label booklet	1	36–32882–01

¹The slide mount assembly comes assembled and does not have a single part number.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

8.1.2 Where to Install the Magazine Tape ISE

The third level of the DECarray cabinet is reserved for magazine tape ISEs. Facing the front of the cabinet, position 5 is on the left, and position 6 is on the right.

8.1.3 Completing the System Configuration Sheet

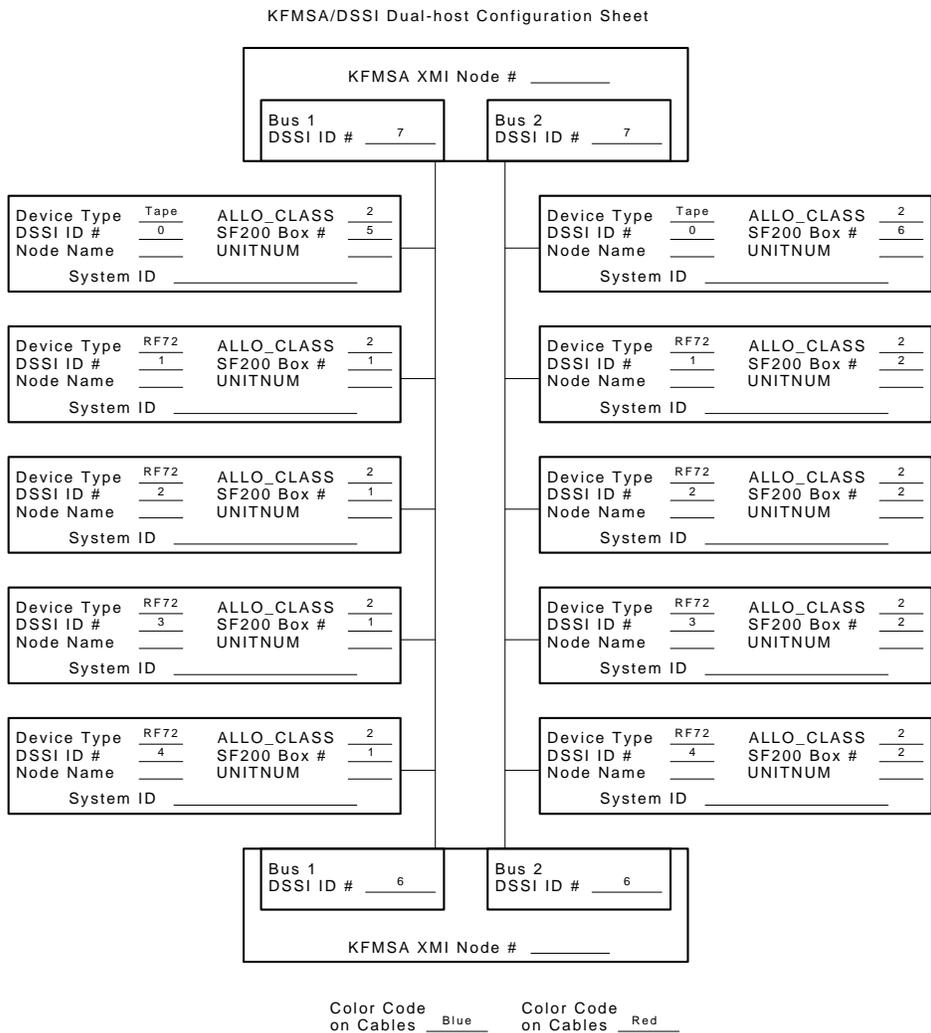
Locate the system configuration sheet. If you cannot locate this sheet or if the one that is available is either not filled out or filled out incorrectly, fill one out before continuing with the installation procedure.

Figures 8-1 and 8-2 show examples of the system configuration sheet.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

Figure 8-2 System Configuration Sheet (Dual-System)



SHR-X0133A-90

Installing the Magazine Tape ISE in a DECarray Cabinet
8.1 Installing the TF8x7 Storage Enclosure

8.1.4 Installation Procedure

This section describes the step-by-step procedures for installing a magazine tape ISE in a DECarray cabinet.

Be sure to:

- Follow each step in order, and do not skip any steps
- Leave sufficient room to perform the installation (approximately 1.5 meters to 1.8 meters [5 feet to 6 feet] front and rear of the DECarray)

WARNING

Observe all ESD precautions and procedures.

An antistatic wrist strap is inside the front and rear doors.

CAUTION

Do not attempt to pick up or support the product by the rear of the enclosure. Doing so will injure the person attempting the installation or damage the power supply.

To maintain stability, extend only one TF8x7 storage enclosure or magazine tape ISE on the slide mounts at a time.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

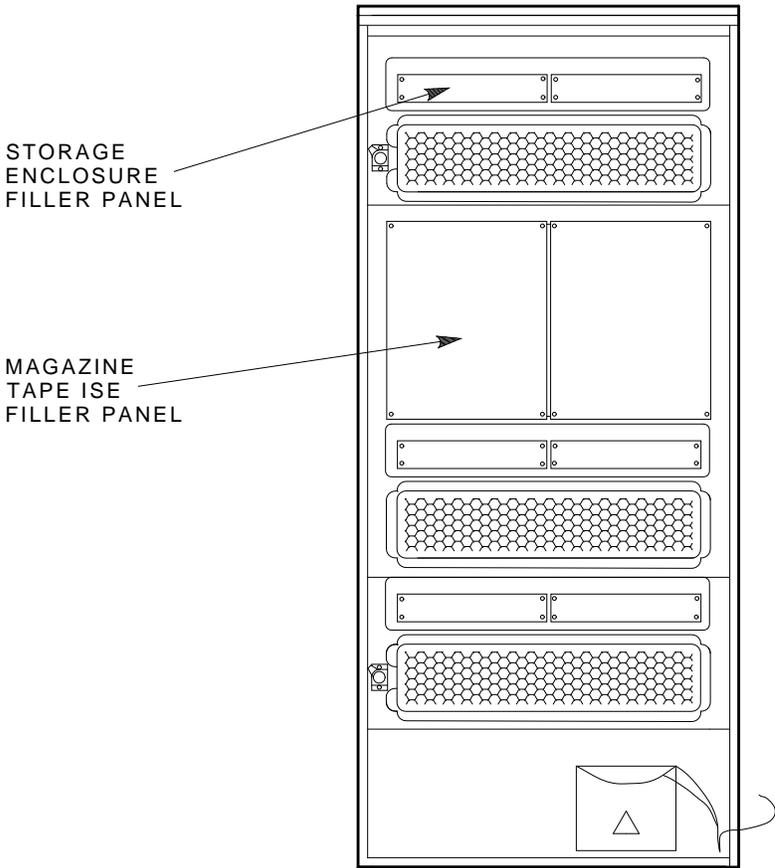
8.1.4.1 Preparing the DECarray Cabinet

The following procedure describes how to prepare the DECarray cabinet to receive the magazine tape ISE:

1. Place the magazine tape ISE to be installed to one side, in front of the cabinet.
2. Open front and rear doors of the DECarray (Figure 8-3).
3. Remove the front door filler panel for the position where you are installing the magazine tape ISE (Figure 8-3).

Installing the Magazine Tape ISE in a DECarray Cabinet
8.1 Installing the TF8x7 Storage Enclosure

Figure 8-3 Removing a Filler Panel



MA-0418-92.DG

Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

8.1.4.2 Hardware Installation Procedures

Perform the following steps completely and in the order presented.

CAUTION

Before performing the following steps, refer to the system documentation for the correct steps to perform an orderly shutdown of the system that the DECarray is connected to.

1. Install the ac power cord (Figure 8-4).
 - a. Swing open and remove the panel from the cabinet frame.

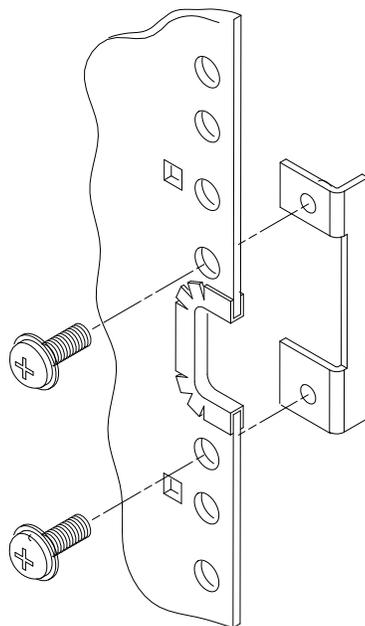
CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

- b. Locate the ac power cord retainer bracket at the third level of the DECarray cabinet.
- c. Loosen lower screw of the ac retainer bracket. Remove the upper ac power cord retainer bracket screw and tilt the retainer 45 degrees. Then retighten the lower screw.
- d. Place ac power cord in the retainer space with the shrouded male plug end inside cabinet side rail.
- e. Loosen the lower screw and put the retainer bracket back to its original position. Then reinsert the upper screw and tighten both the top and bottom screws.
- f. Connect the male end of the ac power cord to the first available outlet on the power controller.

Installing the Magazine Tape ISE in a DECarray Cabinet
8.1 Installing the TF8x7 Storage Enclosure

Figure 8-4 AC Power Cord Retainer



SHR-X0137-90

Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

2. Install the slide mount and associated hardware (Figure 8-5).

The slide mount has two parts; the *adjustable* end and the *slotted* end. The adjustable end has four screws that, when loosened, allow the slide mount to be placed in the cabinet and then extended to make a secure fit.

When installing the slide mount in positions 3, 5, and 7, install the slotted end in the front left cabinet frame rail. When installing the slide mount in positions 2, 4, 6, and 8, install the adjustable end in the front right cabinet frame rail. The position numbers are visible on both the right and left cabinet frame rails from either the front or the rear.

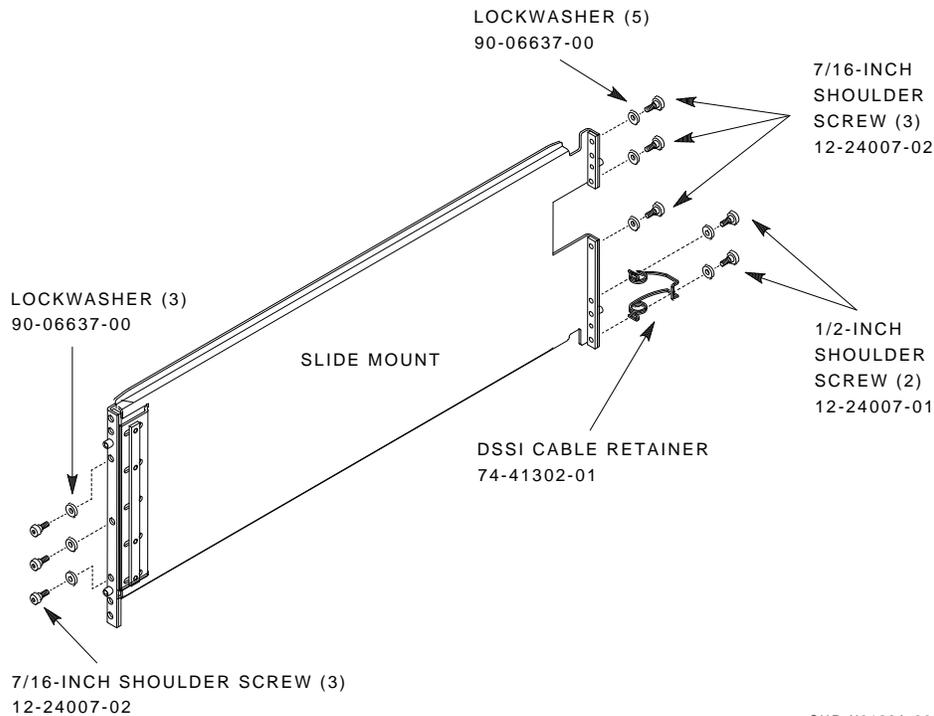
- a. Loosen the four screws in the adjustable end of the slide mount.
- b. From the front of the cabinet, place the slide mount in the cabinet so that the stamped UP and arrow are visible.
- c. Align the guide pin with the X stamped in the cabinet frame rail.
- d. Install one 7/16-inch shoulder screw and washer (hand-tighten) in the center threaded hole of the slide mount.
- e. Install the opposite end of the slide mount into the rear cabinet side rail. Again, align the guide pins with the X on the rail.
- f. Install one 7/16-inch shoulder screw and washer (hand-tighten) in the center threaded hole of the slide mount.
- g. At the rear of the cabinet, install two 1/2-inch shoulder screws with washers and the DSSI cable retainer clip. Note that the DSSI cable retainer clip must always point away from the center of the cabinet and that it is installed on the lower half of the slide mount.
 - At the rear of the cabinet, install two 1/2-inch shoulder screws with washers and the DSSI cable retainer clip. Note that the DSSI cable retainer clip must always point away from the center of the cabinet.
 - Place a 1/2-inch shoulder screw with a washer through the lower hole of the DSSI cable retainer clip and install the screw (hand-tighten) in the bottom threaded hole in the slide mount.
 - Place the other 1/2-inch shoulder screw with a washer through the upper hole of the DSSI cable retainer clip and install the screw (hand-tighten) in the threaded hole in the slide mount.
- h. While facing the rear of the cabinet, install two 7/16-inch shoulder screws with washers (hand-tighten)—one screw in the bottom threaded hole and the other in the threaded hole beneath the center rear shoulder screw (hand-tighten) previously installed.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

- i. While facing the front of the cabinet, install two 7/16-inch shoulder screws with washers (hand-tighten)—one screw in the bottom threaded hole and the other in the threaded hole beneath the center rear shoulder screw (hand-tighten) previously installed.
- j. Tighten all shoulder screws.
- k. Tighten the four slide mount screws.

Figure 8-5 Installing the Slide Mount



- l. From the front of the cabinet, install the upper and lower weldment brackets on the cabinet side rail using 1/2-inch shoulder screws and washers (Figure 8-6).

The center hole of the weldment bracket goes over the guide pin on the slide mount so the large end of the top weldment bracket points up and the large end of the bottom weldment bracket points down, regardless of whether you are installing the brackets on the front right or left cabinet frame rails.

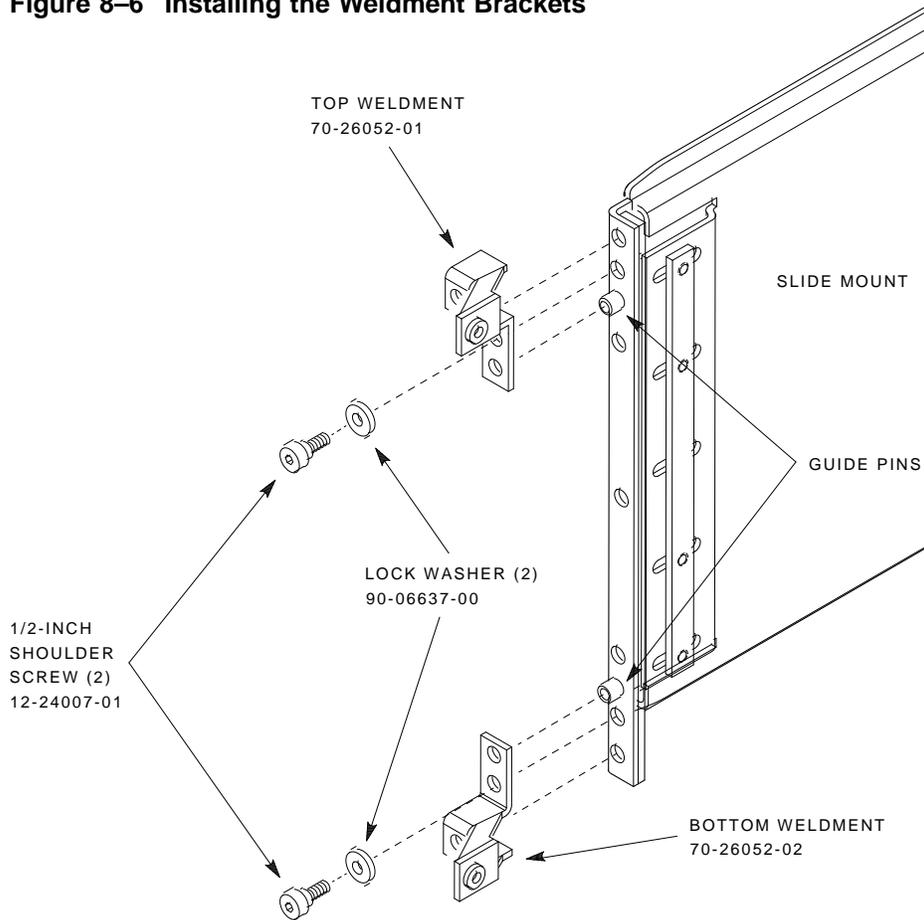
Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

Note

Do NOT tighten the screws at this time.

Figure 8-6 Installing the Weldment Brackets



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Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

3. Install the magazine tape ISE.
 - a. Loosen the shipping screw in the rear, upper right corner of the magazine tape ISE.
 - b. Remove the magazine tape ISE assembly from the extrusion tube. Push the inner assembly out to the first mechanical stop. Release the stop and then push the inner assembly out to the second mechanical stop. Then remove the inner assembly from the extrusion tube. Place the inner assembly to one side.

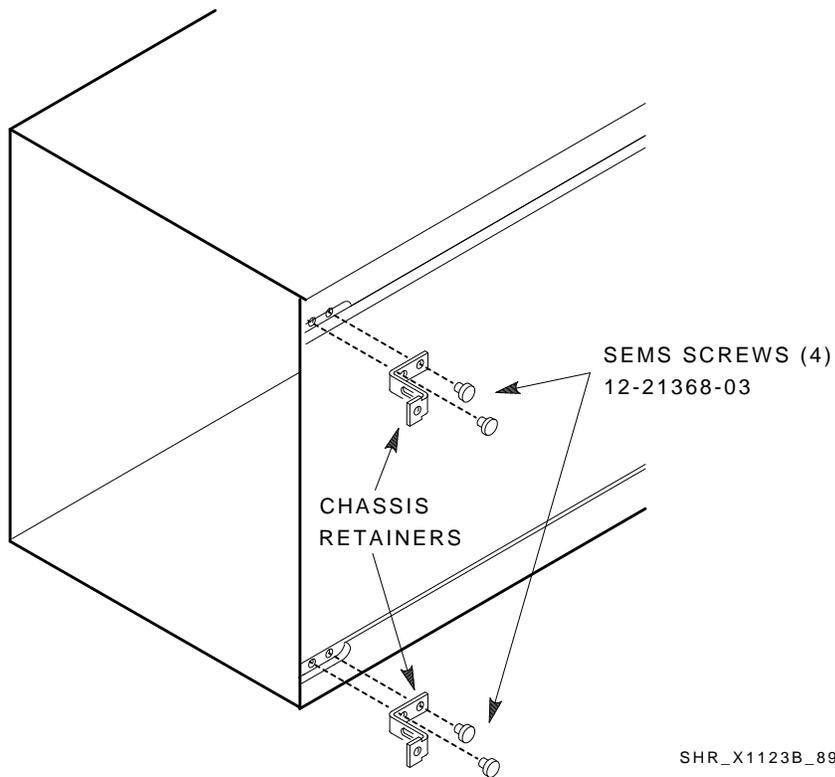
CAUTION

Do NOT open the front of the magazine tape ISE inner assembly while the inner assembly is out of the extrusion tube.

- c. Install both chassis retainers on the front, right side (position 5) or left side (position 6) of the extrusion tube (top and bottom, Figure 8-7).

Installing the Magazine Tape ISE in a DECarray Cabinet
8.1 Installing the TF8x7 Storage Enclosure

Figure 8-7 Chassis Retainers

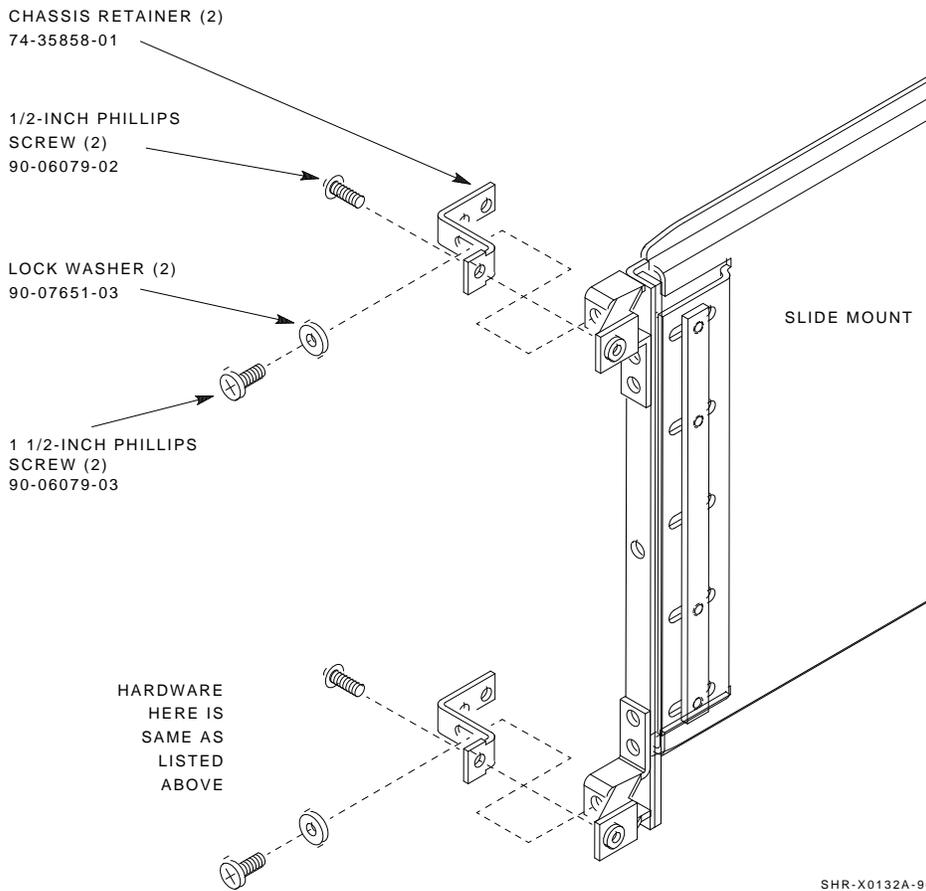


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Installing the Magazine Tape ISE in a DECarray Cabinet 8.1 Installing the TF8x7 Storage Enclosure

- d. At the front of the cabinet, lift the extrusion tube up and onto the slide mount until the chassis retainers touch the weldment brackets.
- e. Install and tighten the two outer weldment screws, then install and tighten the two inner weldment screws (Figure 8-8).
- f. Tighten the upper and lower weldment 1/2-inch shoulder screws and washers.

Figure 8-8 Securing the Tube to the Weldment Brackets



Installing the Magazine Tape ISE in a DECarray Cabinet

8.1 Installing the TF8x7 Storage Enclosure

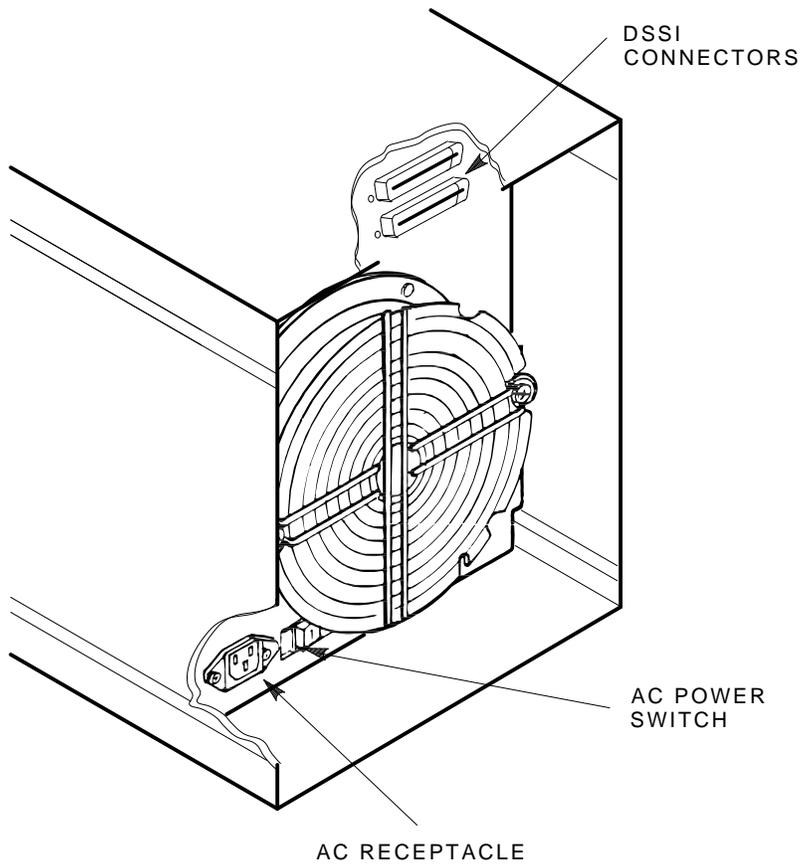
4. While the inner assembly is out of the extrusion tube, check the DSSI ID switches on the DSSI controller module. Ensure that the DSSI ID switch is set to 0 and that the TMSCP switch is down or enabled. Refer to the magazine tape ISE documentation for information on how to access the DSSI controller module.
5. Perform the following steps to complete the hardware installation of the magazine tape ISE:
 - a. Lift and push the inner assembly back into the extrusion tube.
 - b. At the rear of the magazine tape ISE, make sure that the ac power switch is off or in the 0 position (Figure 8-9).
 - c. Also check the factory set ac power on the magazine tape ISE. Model variants -AA are 120 Vac and model variants -AB are 220 Vac.
 - d. Place the magazine tape ISE in the head cleaning position (first mechanical stop).
 - e. Connect the ac power cord to the magazine tape ISE.
 - f. Check that this and all other OCP and magazine tape ISE fronts project through the front door of the DECarray correctly. If not, adjust the height with shims. It may be necessary to adjust cabinet door mounting at the door hinges.

CAUTION

Do not power up the enclosure at this time.

**Installing the Magazine Tape ISE in a DECarray Cabinet
8.1 Installing the TF8x7 Storage Enclosure**

Figure 8-9 AC Power Switch, Voltage Selections, and Power Cord



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Installing the Magazine Tape ISE in a DECarray Cabinet

8.2 Cabling the Magazine Tape ISE

8.2 Cabling the Magazine Tape ISE

This section describes the step-by-step procedure for cabling the magazine tape ISE that you just installed to the existing DSSI bus configuration of the DECarray.

Refer to Section 8.2.1 for instructions on cabling the magazine tape ISE in a DECarray configured for single-system. Refer to Section 8.2.2 for instructions on cabling the magazine tape ISE in a DECarray configured for a DSSI VAXcluster system.

8.2.1 Single-System Configuration

Use the following procedures for cabling a magazine tape ISE in a DECarray configured for single-system.

8.2.1.1 Cabling Position 5

CAUTION

Before performing the following steps, refer to the system documentation for the correct steps to perform an orderly shutdown of the system that the DECarray is connected to.

1. Take the disk ISEs in position 1 off-line before you proceed. To do so, first take each ISE off-line by pressing the Ready buttons. Then press all the drive dc power switches to the out position. Last, turn off the ac power at the rear of the storage enclosure.

CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

2. Disconnect the 70-inch DSSI cable (PN BC21Q-3F) connected to the rightmost DSSI connector at the rear of the TF8x7 enclosure in position 1.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.2 Cabling the Magazine Tape ISE

3. Pull the inner assembly out to the head cleaning position (first mechanical stop).
4. Connect the 70-inch DSSI cable removed from position 1 (Figure 8–10) and connect it to the top DSSI connector on the rear of the magazine tape ISE. Route this DSSI cable under the cable retainers on the right side of the cabinet.
5. Connect a 42-inch DSSI cable (PN BC21Q–3F) to the rightmost DSSI connector at the rear of the TF8x7 in position 1 and to the bottom DSSI connector at the rear of the magazine tape ISE in position 5. Route this DSSI cable under the cable retainers on the right side of the cabinet.
6. Push the inner assembly back into the extrusion tube.

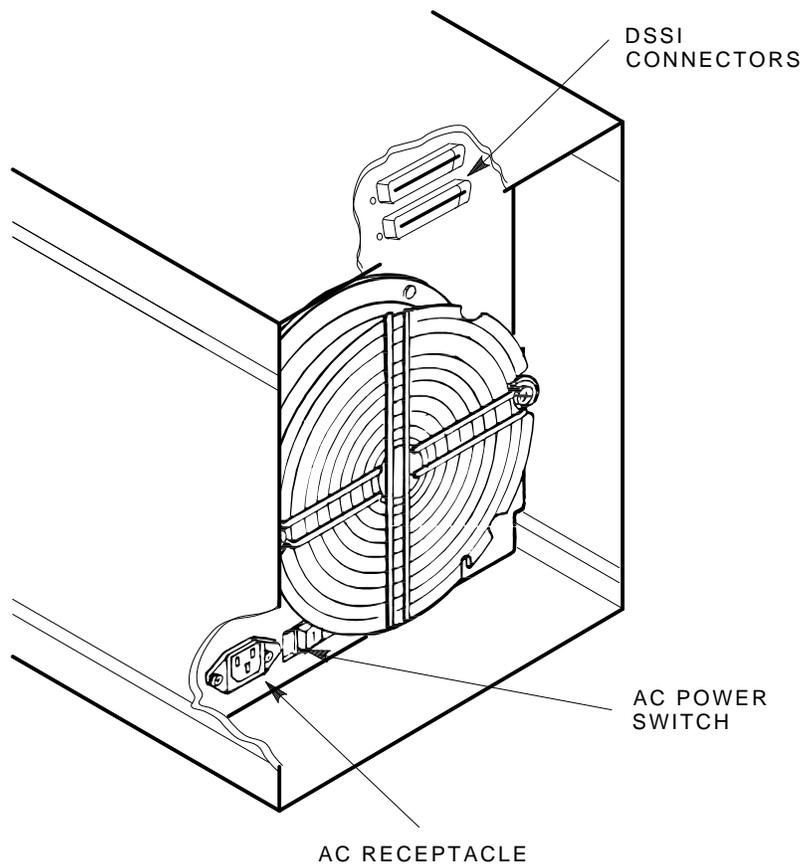
CAUTION

Do not power up the magazine tape ISE or the TF8x7 storage enclosure at this time.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.2 Cabling the Magazine Tape ISE

Figure 8-10 Installing the 42- and 70-Inch DSSI Cable (Position 5)



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Installing the Magazine Tape ISE in a DECarray Cabinet

8.2 Cabling the Magazine Tape ISE

8.2.1.2 Cabling Position 6

CAUTION

Before performing the following steps, refer to the system documentation for the correct steps to perform an orderly shutdown of the system that the DECarray is connected to.

1. Take the drives in the TF8x7 storage enclosure in position 2 (if present) off-line before you proceed. To do so, first take each ISE off-line by pressing the Ready buttons. Then press all the drive dc power switches to the out position. Last, turn off the ac power at the rear of the storage enclosure.

CAUTION

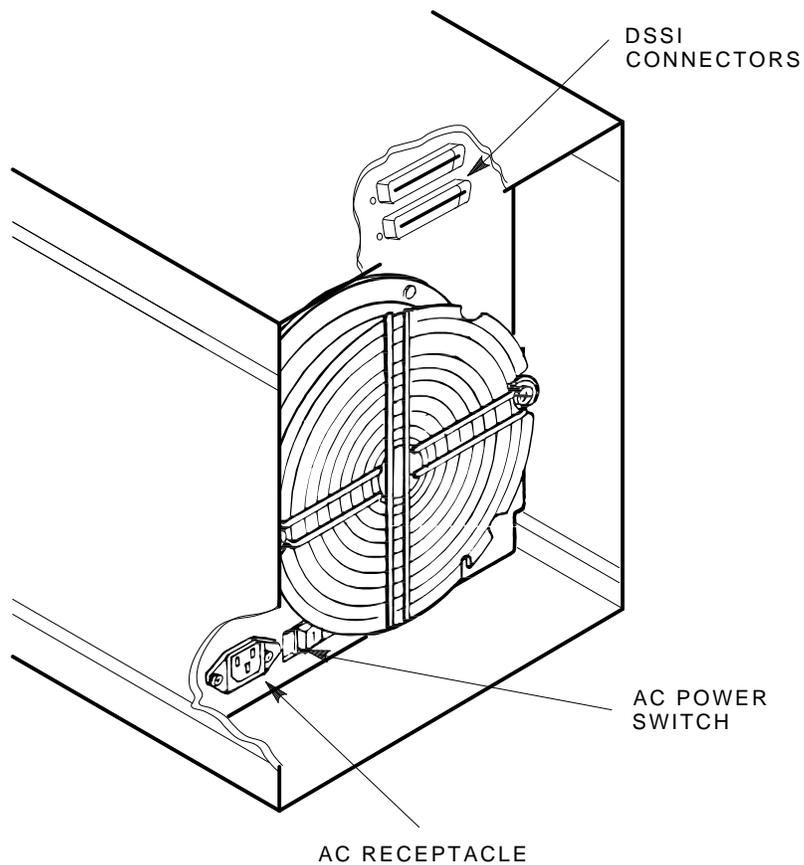
Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

2. Disconnect the 70-inch DSSI cable (PN BC21R-5L) connected to the rightmost DSSI connector at the rear of the TF8x7 enclosure in position 2.
3. Place the inner assembly of the magazine tape ISE to the head cleaning position (first mechanical stop). DSSI connector on the rear of the magazine tape ISE.
4. Install this 70-inch DSSI cable (Figure 8-11) to the top DSSI connector on the rear of the magazine tape ISE.
5. Route this DSSI cable under the cable retainers on the right side of the cabinet.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.2 Cabling the Magazine Tape ISE

Figure 8-11 Installing the 70-Inch DSSI Cable (Position 6)



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Installing the Magazine Tape ISE in a DECarray Cabinet

8.2 Cabling the Magazine Tape ISE

6. Connect a 42-inch DSSI cable (PN BC21Q-3F) to the rightmost DSSI connector at the rear of the SF7x in position 2 and to the bottom DSSI connector at the rear of the magazine tape ISE in position 6.
7. Route this DSSI cable under the cable retainers on the appropriate side of the cabinet.
8. Push the inner assembly back into the extrusion tube.

CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

9. If no SF7x storage enclosure is installed in position 2, then at the rear of the DECarray, locate the DSSI I/O panel at the bottom. Use a 3/16-inch flatblade screwdriver to loosen the two captive screws at the right of the panel.
10. Swing open and remove the panel from the cabinet frame.

CAUTION

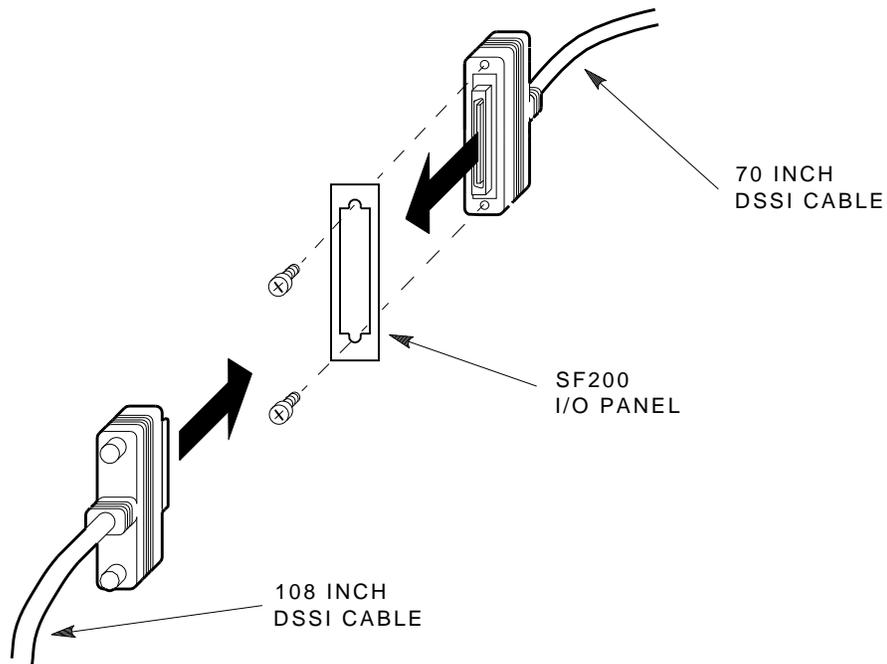
Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

11. Remove the two Phillips screws that hold the panel blank in port 2 of the I/O panel.
12. Install a 70-inch DSSI cable (PN BC21R-5L) in place of the panel blank you just removed in the previous step.
13. Connect the other end of this cable into the top DSSI connector at the rear of the magazine tape ISE (Figure 8-12).
14. Route this DSSI cable under the cable retainers on the left side of the cabinet.
15. Connect a 108-inch DSSI cable (PN BC21Q-09) into the port you just installed in the previous steps. Tighten the retainer screws with your fingers.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.2 Cabling the Magazine Tape ISE

Figure 8-12 Installing the DSSI Cables



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Installing the Magazine Tape ISE in a DECarray Cabinet

8.2 Cabling the Magazine Tape ISE

16. Plug the other end of this cable into the appropriate port on the system I/O panel at the rear of the system cabinet. To determine which of the two DSSI connectors on the system I/O panel to connect to:
 - a. Open the system I/O panel by removing the six screws that secure the I/O panel to the system chassis. Let the panel swing down to its resting position.
 - b. Find the first KFMSA module installed in the system XMI backplane. It is the KFMSA module in the lowest numbered slot of the KFMSA modules installed.
 - c. Follow the cabling from the backplane to the system I/O panel.
 - d. While viewing the front of the I/O panel, note that the DSSI connector on the right is KFMSA DSSI bus 1 and the left is bus 2.
 - e. For port 2 on the DECarray I/O panel, connect the 108-inch DSSI cable to the left DSSI connector of the system I/O panel.

CAUTION

Do not apply power to the magazine tape ISE at this time.

17. Install a DSSI terminator in the bottom DSSI connector at the rear of the magazine tape ISE.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.2 Cabling the Magazine Tape ISE

8.2.2 DSSI VAXcluster Configuration

Use the following procedures for cabling a magazine tape ISE in a DECarray configured for DSSI VAXcluster system.

8.2.2.1 Cabling Position 5

CAUTION

Before performing the following steps, refer to the system documentation for the correct steps to perform an orderly shutdown of the system that the DECarray is connected to.

1. Take the disk ISEs in position 1 off-line before you proceed. To do so, first take each ISE off-line by pressing the Ready buttons. Then press all the drive dc power switches to the out position. Last, turn off the ac power at the rear of the storage enclosure.

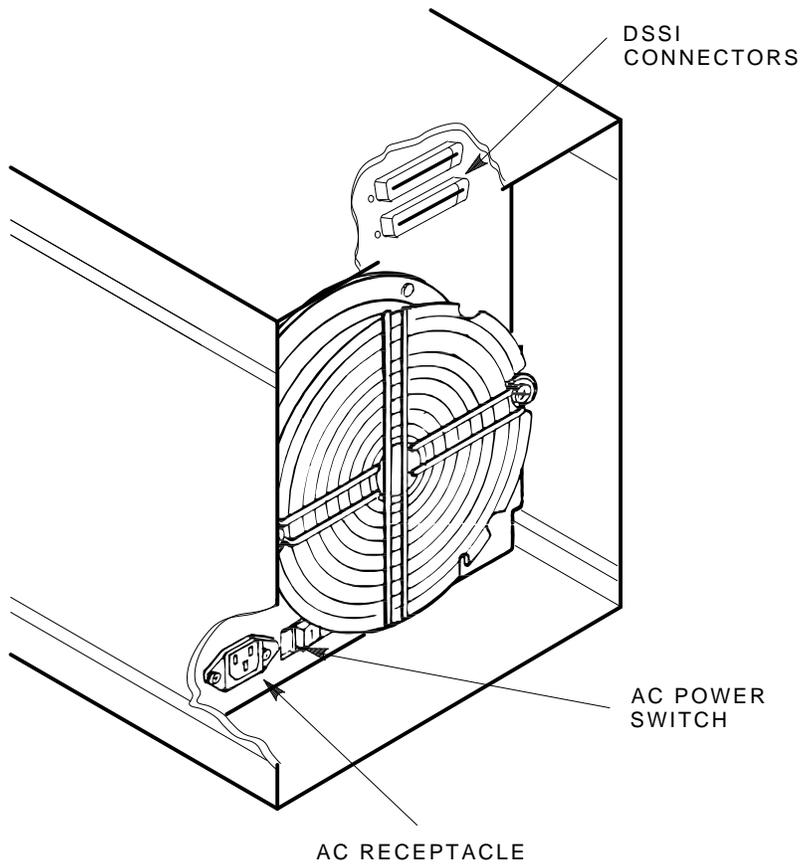
CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

2. Pull the inner assembly of the magazine tape ISE out to the head cleaning position (first mechanical stop).
3. Disconnect the 70-inch DSSI cable (PN BC21R-5L) connected to the rightmost DSSI connector at the rear of the SF7x enclosure in position 1.
4. Connect the 70-inch DSSI cable removed from the SF7x storage enclosure to the top DSSI connector on the rear of the magazine tape ISE.
5. Route this DSSI cable under the cable retainers on the right side of the cabinet.
6. Connect a 42-inch DSSI cable (PN BC21Q-3F) to the rightmost DSSI connector at the rear of the SF7x in position 1 to the bottom DSSI connector at the rear of the magazine tape ISE in position 5 (Figure 8-13).
7. Route this DSSI cable under the cable retainers on the right side of the cabinet.

Installing the Magazine Tape ISE in a DECarray Cabinet
8.2 Cabling the Magazine Tape ISE

Figure 8-13 Installing the 42-Inch DSSI Cable (Position 5)



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Installing the Magazine Tape ISE in a DECarray Cabinet

8.2 Cabling the Magazine Tape ISE

8.2.2.2 Cabling Position 6

CAUTION

Before performing the following steps, refer to the system documentation for the correct steps to perform an orderly shutdown of the system that the DECarray is connected to.

1. If an TF8x7 storage enclosure is installed in position 2, take the disk ISEs in position 2 off-line before you proceed. To do so, first take each ISE off-line, then press all the drive dc power switches to the out position, and then turn off the ac power at the rear of the storage enclosure.

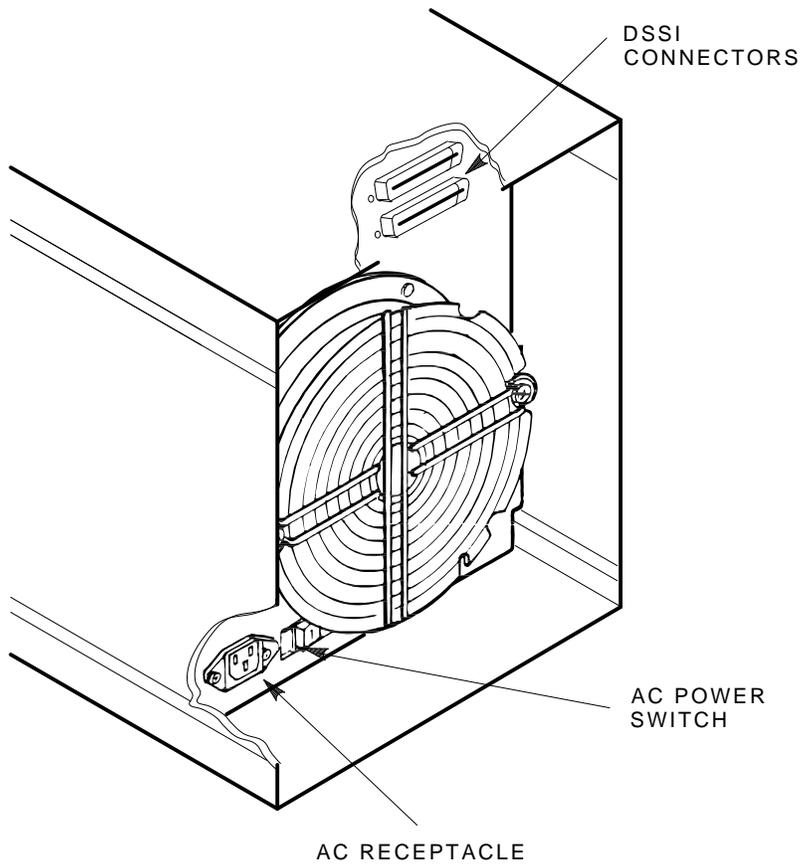
CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

2. Disconnect the 70-inch DSSI cable (PN BC21Q-3F) connected to the rightmost DSSI connector at the rear of the TF8x7 enclosure in position 2.
3. Pull the inner assembly of the magazine tape ISE out to the head cleaning position (first mechanical stop).
4. Connect this 70-inch DSSI cable to the top DSSI connector on the rear of the magazine tape ISE.
5. Route this DSSI cable under the cable retainers on the left side of the cabinet.
6. Connect a 42-inch DSSI cable (PN BC21Q-3F) to the rightmost DSSI connector at the rear of the TF8x7 in position 2 to the bottom DSSI connector at the rear of the magazine tape ISE in position 6 (Figure 8-14).
7. Route this DSSI cable under the cable retainers on the left side of the cabinet.

Installing the Magazine Tape ISE in a DECarray Cabinet
8.2 Cabling the Magazine Tape ISE

Figure 8-14 Installing the 42-Inch DSSI Cable (Position 6)



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Installing the Magazine Tape ISE in a DECarray Cabinet

8.2 Cabling the Magazine Tape ISE

8. If there is no TF8x7 storage enclosure installed in position 2, then at the rear of the DECarray cabinet, locate the DSSI I/O panel at the bottom. Use a 3/16-inch flatblade screwdriver to loosen the two captive screws at the right of the panel.
9. Swing open and remove the panel from the cabinet frame.

CAUTION

Use care not to disturb or damage power cords and DSSI cables that are already connected to the DSSI I/O panel.

10. Install a 70-inch DSSI cable (PN BC21R-5L) to port 2 on the DECarray I/O panel by first removing the panel blank.
11. Connect the other end of this 70-inch DSSI cable to the top DSSI connector on the rear of the magazine tape ISE.
12. Install a 70-inch DSSI cable (PN BC21R-5L) to port 10 on the DECarray I/O panel by first removing the panel blank.
13. Connect the other end of this 70-inch DSSI cable to the bottom DSSI connector on the rear of the magazine tape ISE.

Installing the Magazine Tape ISE in a DECarray Cabinet
8.3 Powering Up the Magazine Tape ISE

8.3 Powering Up the Magazine Tape ISE

Follow these steps to apply power to a newly installed magazine tape ISE.

1. Turn the ac power switch on the rear of the magazine tape ISE to the on position.
 - a. All its OCP indicators turn on (generally within 15 seconds).
 - b. While the elevator scans the magazine, all OCP indicators, except for Power On, turn off.
 - c. Assuming the ISE has a magazine with a cartridge in position 0, and no cartridge is in the drive, the final power-on self-test (POST) status displays:
 - Power On indicator on
 - Eject indicator on
 - Load/Unload indicator on
 - Slot Select indicator on
 - Slot 0 indicator on
2. If a fault occurs, refer to Chapter 9 or the Magazine Tape ISE service manual.

Proceed to Section 8.3.1 once these steps are accomplished and the magazine tape ISE has passed POST.

8.3.1 Updating the System Configuration Sheet

Now that the magazine tape ISE has been successfully installed, power has been applied, and the drives have passed POST, you are ready to update the system configuration sheet.

Refer to the *KFMSA Module Installation and User Manual* for complete details on filling out a system configuration sheet.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.4 Labeling the DSSI Cables and Magazine Tape ISE

8.4 Labeling the DSSI Cables and Magazine Tape ISE

For a single-system configuration, use the following colored labels on the TF8x7 OCP door, magazine tape ISE front panel, and all DSSI cables.

Label Colors	Connections
Blue	Port 1, positions 5, 1, 3
Red	Port 2, positions 6, 2, 3
Yellow	Port 3, positions 4, 8
Green	Port 4, positions 7, 8

For a DSSI VAXcluster configuration, use the following colored labels on the TF8x7 OCP door, magazine tape ISE front panel, and all DSSI cables.

Label Colors	Connections
Blue	Port 1, positions 5 and 1, port 9
Red	Port 2, positions 6 and 2, port 10
Yellow	Port 3, position 3, port 11
Green	Port 4, position 4, port 12
Blue with white stripe	Port 5, position 7, port 13
Red with white stripe	Port 6, position 8, port 14

Installing the Magazine Tape ISE in a DECarray Cabinet

8.4 Labeling the DSSI Cables and Magazine Tape ISE

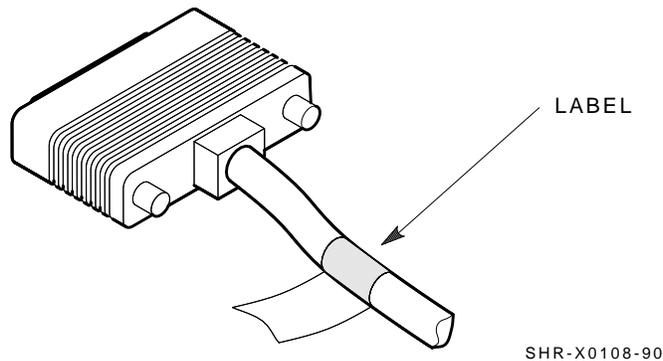
8.4.1 Filling Out the Labels

Refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out the labels for the DSSI cables and TF8x7 operator control panels.

8.4.2 Labeling the Cables

For each cable you just installed, place a label four inches behind the connector as shown in Figure 8-15.

Figure 8-15 Placing a Label on a DSSI Cable



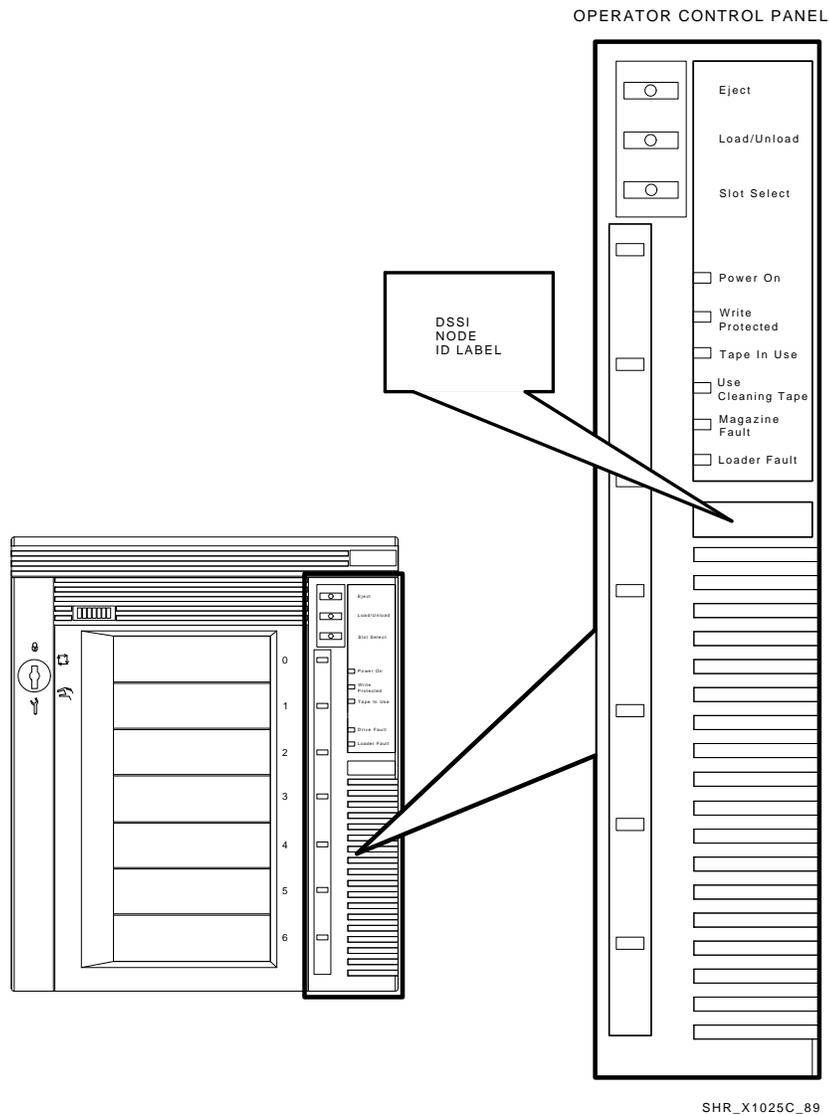
8.4.3 Labeling the Magazine Tape ISE

Place the labels for the front panel of the magazine tape ISE as shown in Figure 8-16.

Installing the Magazine Tape ISE in a DECarray Cabinet

8.4 Labeling the DSSI Cables and Magazine Tape ISE

Figure 8-16 Placing a Label on the Magazine Tape ISE



Installing the Magazine Tape ISE in a DECarray Cabinet

8.5 Final Verification

8.5 Final Verification

Once the hardware installation, cabling and labeling, and the powering up steps are complete, you are ready to configure the DSSI subsystem and verify the correct operation of each ISE in the array with the host system.

Refer to the *KFMSA Module Installation and User Manual* for detailed information on the correct operation of each ISE. These manuals contain procedures for establishing the communications between the ISEs, the adapter module, and the system. They also contain step-by-step procedures for reconfiguring the system with its newly installed DSSI devices.

Refer to the manuals for the disk ISE and magazine tape ISE for detailed information on the local programs in the ISEs.

If at any time you detect a failure, refer to Chapter 9.

Once the verification is complete, close the cabinet doors; turn the hex-Allen fasteners one quarter turn clockwise to lock. The system is ready to be turned over to the system manager.

9

Installation Troubleshooting

This chapter explains what to do if you detect problems with one or more SF-series storage enclosure(s) during the installation of the DECarray cabinet.

The procedures in this chapter involve taking ISEs on- and off-line. This causes a failure in the communications with the ISEs affected, resulting in potential user problems. For this reason, the system manager should perform an orderly shutdown of all DSSI ISEs before any troubleshooting. Refer to the service or maintenance manuals for the affected ISEs.

Installation Troubleshooting

9.1 Troubleshooting the Storage Enclosure

9.1 Troubleshooting the Storage Enclosure

This section presents symptoms of a failed device, the probable cause or causes of the failure, and the action to take for correcting the failure. Much of the corrective action calls for taking a device or devices off-line or for removing power from the enclosure containing the failed device.

WARNING

Take all ESD and safety precautions when handling the devices, more specifically, when taking a device off-line or when removing a device. Failure to do so may damage the device.

Use the following basic steps for all troubleshooting that you perform for a disk ISE in an SF-series storage enclosure, as it resides in a DECarray cabinet:

1. Inspect the ISE's operator control panel (OCP). Is a Fault indicator lit? In the case of an SF7x storage enclosure, press the Fault button and read the error code.
2. Access the ISE in question. Gain access to the ISE's various cables and check that they are seated correctly.
3. Run DRVTST or DRVEXR on the ISE by using DUP.
4. According to the findings from the error codes and results from DUP, repair or replace the ISE.
5. Run EVCXE or EVCXF configuration programs.
6. Verify the repair or replacement of the ISE with DRVTST and DRVEXR under DUP.
7. Return the system to the user.

Installation Troubleshooting

9.1 Troubleshooting the Storage Enclosure

Use Table 9–1 to isolate a failure in a storage enclosure.

Table 9–1 Troubleshooting Chart

Symptom(s)	Probable Cause(s)	Corrective Action(s)
No OCP indicators are lit.	1. Storage enclosure is not plugged in or not turned on.	1. Plug in the ac power cord or turn on the AC power.
	2. Drive dc power switch is off.	2. Turn on the drive dc power switch.
	3. OCP is not plugged in or seated firmly.	3. Press the OCP firmly in place.
	4. Bad OCP.	4. Configure and replace a new OCP.
	5. Bad transition module.	5. Configure and replace a new transition module.
Single Fault indicator lit on OCP.	1. Faulty disk ISE.	1. Press lit Fault button. Read fault code ¹ . Replace failed FRU.
	2. Conflicting DSSI ID numbers.	2. Verify correct DSSI node ID settings for that bus.
Multiple Fault indicators lit on OCP.	1. Conflicting DSSI ID numbers.	1. Verify correct DSSI node ID settings for that bus.
	2. Bad OCP.	2. Configure and install a new OCP.
	3. Bad DSSI cable(s).	3. Isolate with DSSI bus meter ² and replace.

¹This step only applies to SF7x storage enclosures.

²The DSSI bus meter, or DBM, is used to look at bus signals in real-time as well as to verify DSSI ID numbers. The DBM can quickly locate faulty cables or duplicate DSSI ID numbers on a given DSSI bus. The DSSI bus meter part number is 29–28008–01.

(continued on next page)

Installation Troubleshooting

9.1 Troubleshooting the Storage Enclosure

Table 9–1 (Cont.) Troubleshooting Chart

Symptom(s)	Probable Cause(s)	Corrective Action(s)
One or more indicators continue to cycle.	1. Conflicting DSSI ID numbers.	1. Verify correct DSSI node ID settings for that bus.
One ISE is not accessible.	1. DC power to ISE is not on. 2. Bad ISE drive module. 3. Bad DSSI cable(s). 4. Bad OCP cable. 5. Bad power harness.	1. Turn on dc power switch. 2. Replace ISE drive module. 3. Isolate with DSSI bus meter ² and replace. 4. Replace cable. 5. Replace power harness.
ISE is not seen or seen at unexpected DSSI ID value.	1. Cables are not plugged in the transition module or ISE. 2. Bad OCP ID switch. 3. Bad OCP cable.	1. Check that both ends of OCP cables are plugged in. 2. Reconfigure and replace OCP. 3. Replace appropriate OCP cable.

²The DSSI bus meter, or DBM, is used to look at bus signals in real-time as well as to verify DSSI ID numbers. The DBM can quickly locate faulty cables or duplicate DSSI ID numbers on a given DSSI bus. The DSSI bus meter part number is 29–28008–01.

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Installation Troubleshooting

9.1 Troubleshooting the Storage Enclosure

Table 9–1 (Cont.) Troubleshooting Chart

Symptom(s)	Probable Cause(s)	Corrective Action(s)
Fan is not spinning and power supply LED is lit.	1. Bad power supply.	1. Replace power supply.
	2. Bad fan.	2. Replace fan.
	3. Bad transition module.	3. Configure a new transition module and replace.
Fan is not spinning and power supply LED is not lit, but storage enclosure is on.	1. Bad power supply.	1. Replace power supply.
	2. Bad power cord.	2. Replace cord.
	3. Bad transition module.	3. Configure a new transition module and replace.

(continued on next page)

Installation Troubleshooting
9.1 Troubleshooting the Storage Enclosure

Table 9–1 (Cont.) Troubleshooting Chart

Symptom(s)	Probable Cause(s)	Corrective Action(s)
In a DSSI VAXcluster installation, one or more of the following symptoms are observed: -unexplained virtual circuit (VC) closures -unexplained VMS crashes -performance degradation	1. Excessive ground offset voltage between DSSI VAXcluster cabinets.	1. Refer to Chapter 2. Measure ground offset voltage between cabinets. Correct faults in power distribution system. Install cabinet grounding wire between all cabinets sharing DSSI buses.
	2. Loose or missing DSSI terminators.	2. Tighten or replace DSSI terminators.
	3. Low terminator power voltage.	3. Replace fuses.
	4. Bus length too long.	4. Shorten bus.
	5. Non DEC devices on bus.	5. Replace with DEC devices.
	6. Terminated mid-bus adapters	6. Remove terminators from mid-bus adapters.

9.2 Removing an RF Disk ISE from an SF3x Storage Enclosure

This section describes the procedure for removing a disk ISE from an SF3x storage enclosure.

WARNING

Take all possible ESD precautions when unpacking the disk ISEs.
Wear a correctly grounded ESD strap.

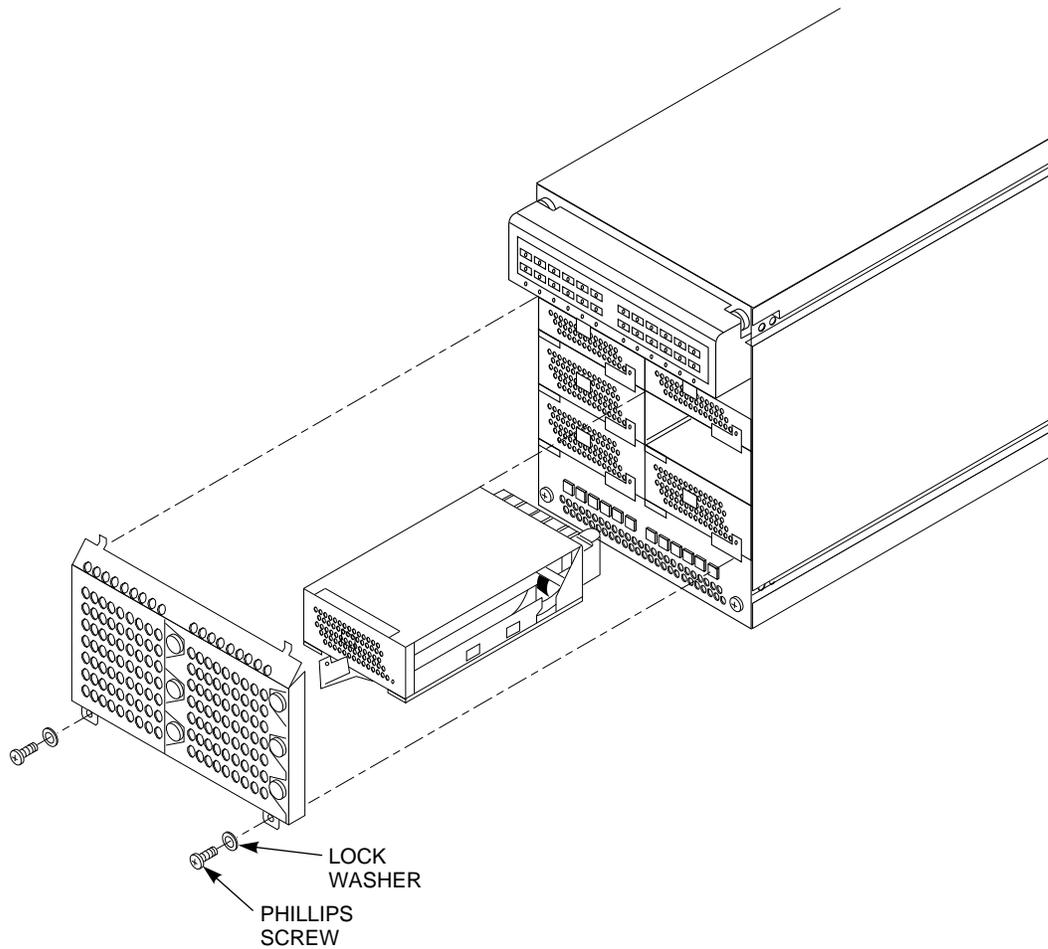
Perform an orderly shutdown of the SF3x enclosure containing the disk ISE. Refer to the system documentation.

1. Power down the SF3x enclosure.
 - a. Take the failed disk ISE on that DSSI bus off-line by pressing and releasing each Ready button on the operator control panel (OCP). The button indicators go out.
 - b. Press and release the drive dc power switches for all the ISEs on that DSSI bus.
2. Remove the disk ISE from the SF3x enclosure (Figure 9-1).
 - a. Remove the cover.
 - b. Remove the screw from the ISE carrier lever.
 - c. Pull the lever forward and slide the carrier out of the slot.

Installation Troubleshooting

9.2 Removing an RF Disk ISE from an SF3x Storage Enclosure

Figure 9-1 Disk ISE Removal (shown with cover removed)



CXO-3952A-MC

Installation Troubleshooting

9.2 Removing an RF Disk ISE from an SF3x Storage Enclosure

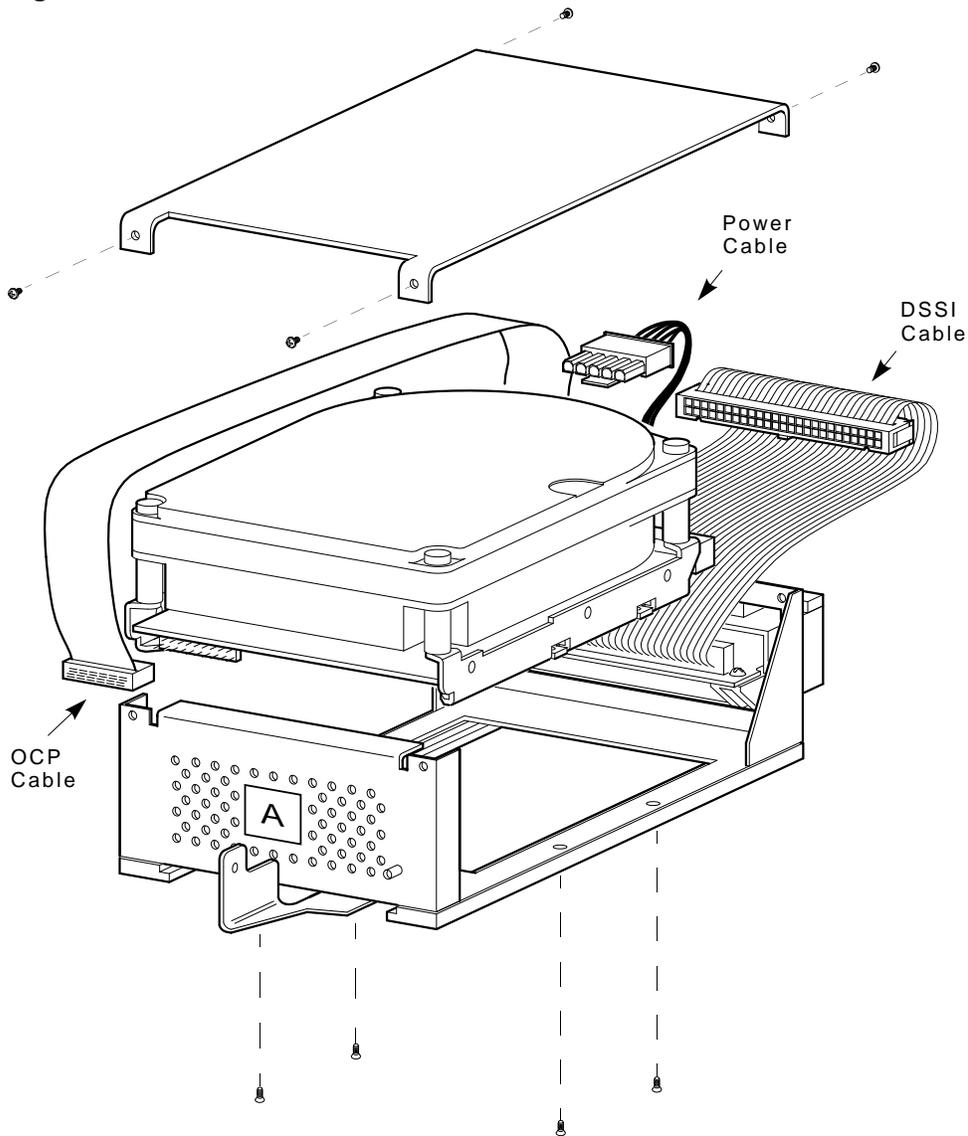
3. Unpack the replacement RF disk ISE:
 - a. Open the shipping carton.
 - b. Remove the disk ISE wrapped in the protective wrapper.
 - c. Open the protective wrapper and remove the disk ISE.
 - d. Place the disk ISE on the protective wrapper.
4. Remove the four screws holding the top cover on the carrier and remove the cover.
5. Remove the faulty ISE from the carrier by removing the two screws on each side of the bottom of the carrier (see Figure 9-2).
6. Lift the ISE out of the carrier and disconnect the DSSI bus, OCP, and power connectors from the ISE.
7. Plug the DSSI bus, power, and OCP connectors into the replacement ISE.
8. Attach the ISE to the carrier.
9. Replace the top cover.
10. Install the disk ISE in the enclosure.
11. Replace the cover.

Proceed to Section 9.4.

Installation Troubleshooting

9.2 Removing an RF Disk ISE from an SF3x Storage Enclosure

Figure 9-2 Disk ISE Installation



MA-0478-92.DG

9.3 Removing an RF Disk ISE from an SF7x Storage Enclosure

This section describes the procedure for removing an disk ISE from an SF7x storage enclosure.

WARNING

Take all possible ESD precautions when unpacking the disk ISEs.
Wear a correctly grounded ESD strap.

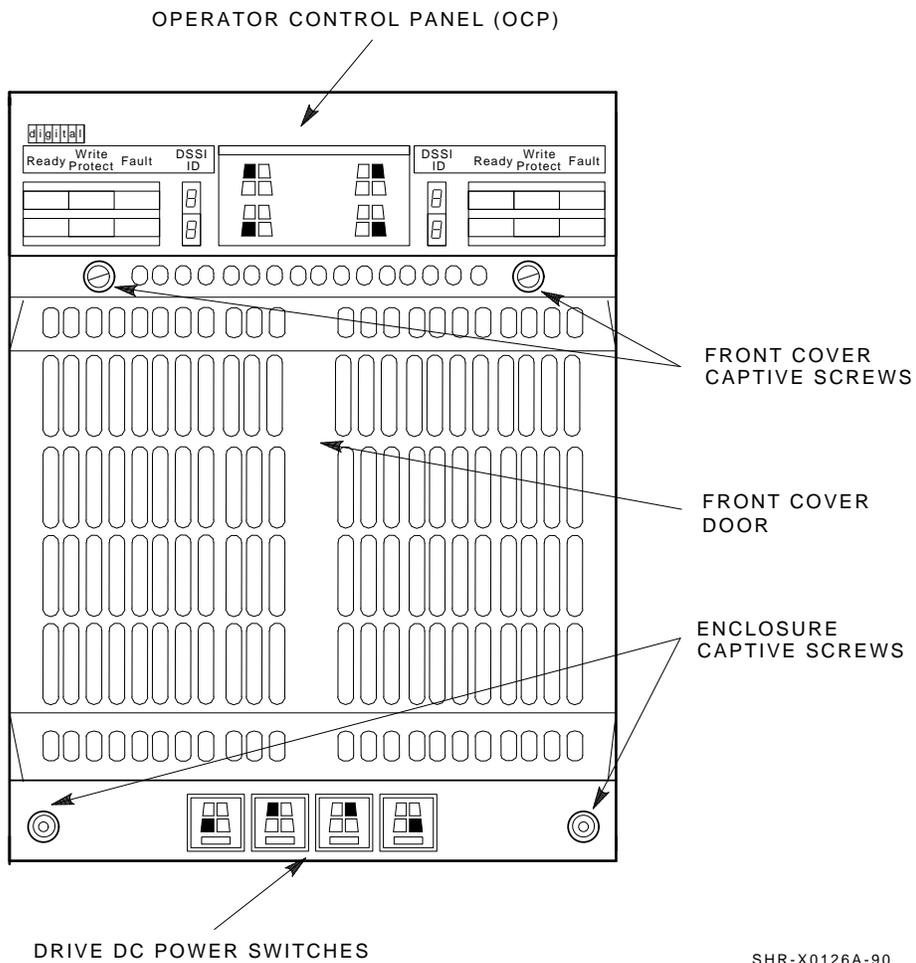
Perform an orderly shutdown of the SF7x enclosure containing the disk ISE. Refer to the system documentation.

1. Power down the SF7x enclosure.
 - a. Take the failed disk ISE on that DSSI bus off-line by pressing and releasing each Ready button on the operator control panel (OCP). The button indicators go out.
 - b. Press and release the drive dc power switch for the failed ISE.
 - c. Remove the front cover. Remove the two screws and lockers and lift off the cover.
2. Remove the disk ISE.
 - a. Remove the SF7x enclosure front cover (Figure 9-3). Loosen the screws and lift off the covers.
 - b. Loosen the wedges on the disk ISE.

Installation Troubleshooting

9.3 Removing an RF Disk ISE from an SF7x Storage Enclosure

Figure 9-3 SF7x Front Cover Removal

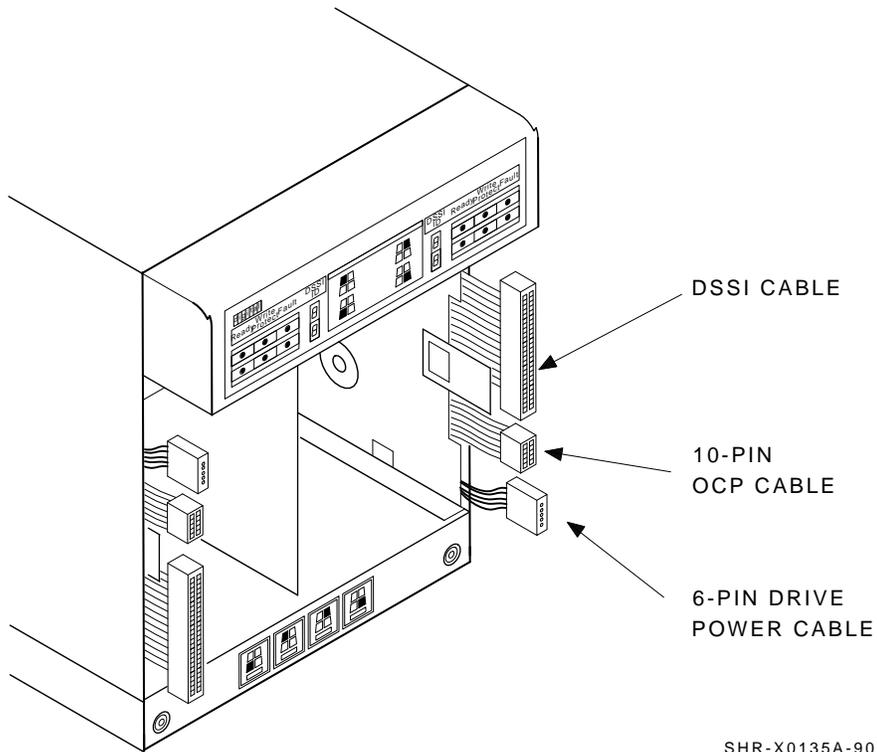


SHR-X0126A-90

Installation Troubleshooting
9.3 Removing an RF Disk ISE from an SF7x Storage Enclosure

- c. Disconnect all cables to the disk ISE as shown in Figure 9-4.

Figure 9-4 Disconnecting the Cables



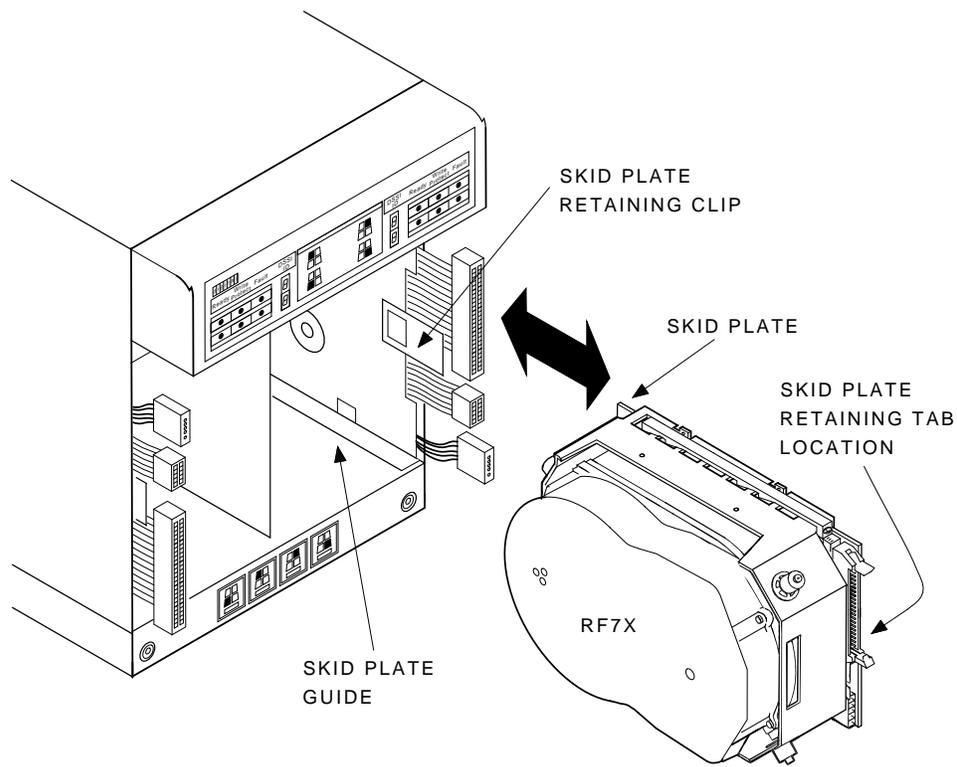
SHR-X0135A-90

Installation Troubleshooting

9.3 Removing an RF Disk ISE from an SF7x Storage Enclosure

- d. Remove the disk ISE as shown in Figure 9–5. Slide out the disk ISE gently, while holding all cables out of the way. Do not force the disk ISE.

Figure 9–5 RF Disk ISE Removal



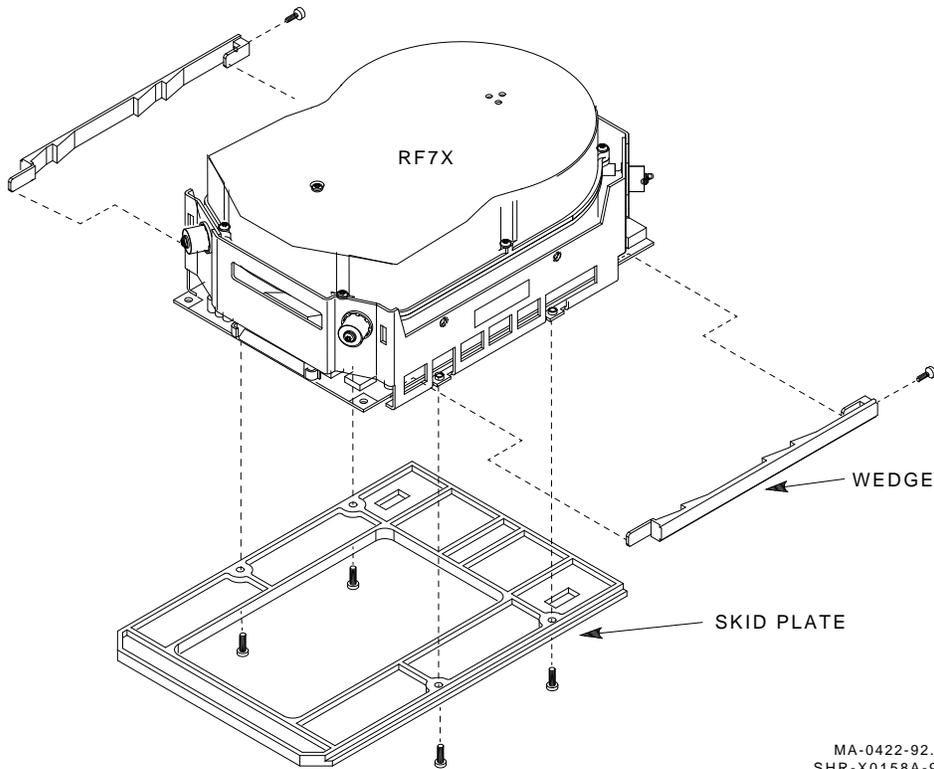
MA-0421-92.DG
SHR-X0136A-90

Installation Troubleshooting

9.3 Removing an RF Disk ISE from an SF7x Storage Enclosure

3. Unpack the replacement RF disk ISE:
 - a. Open the shipping carton.
 - b. Remove the disk ISE wrapped in the protective wrapper.
 - c. Open the protective wrapper and remove the disk ISE. Discard the desiccant bags.
 - d. Place the disk ISE on the protective wrapper.
4. Remove the skid plate and wedges from the faulty disk ISE and install them on the replacement disk ISE (Figure 9-6).

Figure 9-6 Disk Wedges and Skid Plate

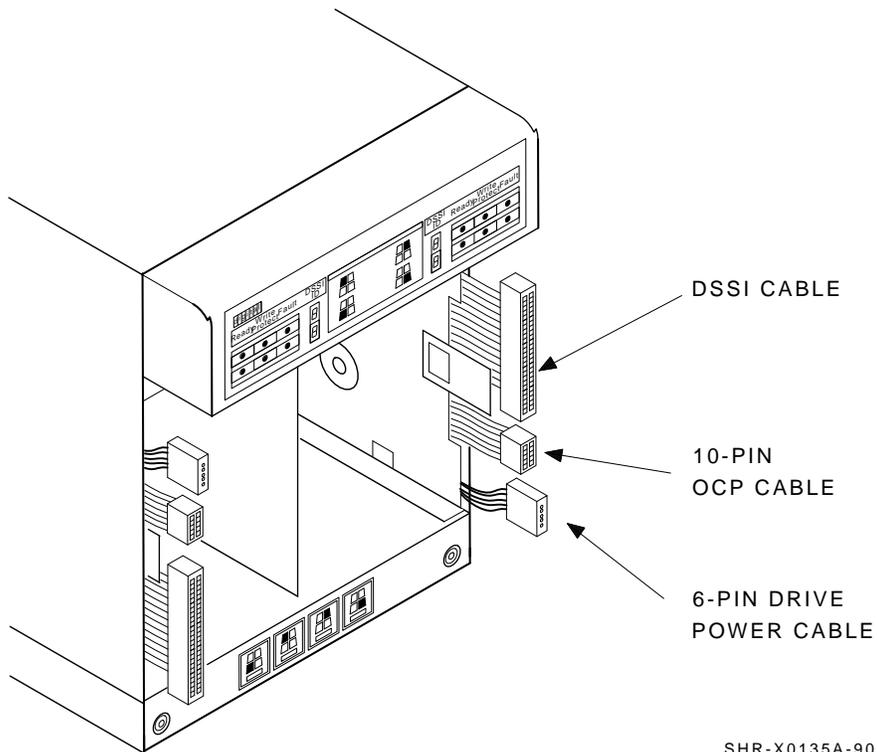


Installation Troubleshooting

9.3 Removing an RF Disk ISE from an SF7x Storage Enclosure

5. Position the RF disk ISE as shown in Figure 9–5 and install the disk ISE in the enclosure. Slide the disk ISE gently into place, while holding all cables out of the way. Do not force the disk ISE.
6. Make sure that the disk ISE is locked into place and tighten the wedges.
7. Connect all cables as shown in Figure 9–7. Connectors are keyed so that the cables cannot be installed incorrectly.

Figure 9–7 Cabling the RF Disk ISE

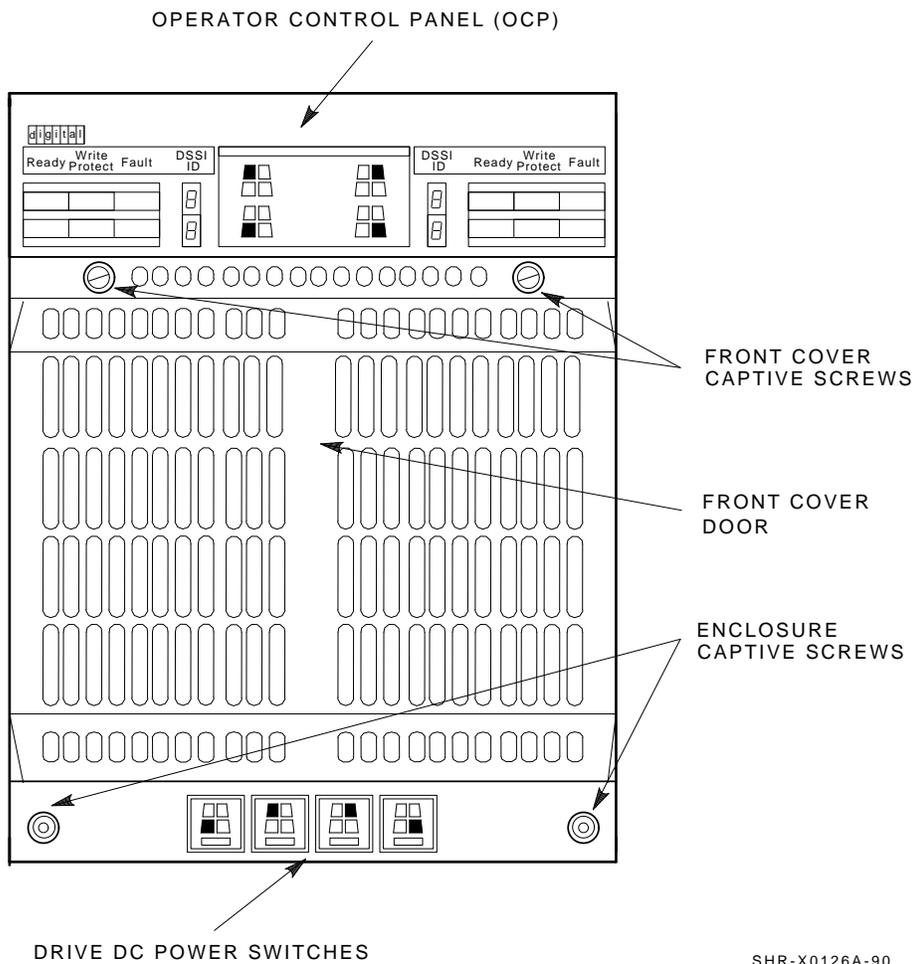


Installation Troubleshooting

9.3 Removing an RF Disk ISE from an SF7x Storage Enclosure

8. Replace the front cover on the SF7x enclosure (Figure 9-8).
Proceed to Section 9.4.

Figure 9-8 SF7x Front Cover Replacement



Installation Troubleshooting

9.4 Bringing the RF Disk ISE On-Line

9.4 Bringing the RF Disk ISE On-Line

This section describes the procedure for bringing the ISEs in the storage enclosure on-line.

1. Ensure that the DSSI node ID switches are set correctly, if applicable.
2. Place the ac power switch at the rear of the storage enclosure to the 1 (on) position.
3. Press all drive dc power switches.
4. Press all Ready buttons on the OCP, one at a time.
5. If no Fault indicators are lit, then continue. If a Fault indicator is lit, recycle the dc power once. If the failure appears again, refer to the previous section.
6. Run the EVCXE or EVCXF programs to add the new disk ISE to the configuration and to change any disk ISE internal parameters, if necessary.
7. Update the system configuration sheet.
8. Run DRVTST and DRVEXR (under DUP) to verify the correct operation of the new disk ISEs.
9. Return the system to the user.

9.5 Troubleshooting the Magazine Tape ISE

Refer to the magazine tape ISE documentation for troubleshooting information.

A

DECarray Cabling Information

This appendix consists of tables containing cabling information for the DECarray variations.

A.1 Single-System Configurations for DECarray with SF7x Enclosures

Table A-1 contains cabling information for DECarray variations containing SF7x enclosures in the single-system configuration.

Note the following:

- DSSI bus termination is supplied by the TTM module inside the SF7x storage enclosures in position 3 and 8.
- The SF7x storage enclosures in positions 3 and 8 must be operating in split-bus mode.
- If a DSSI bus is not connected to a SF7x storage enclosure in position 3 or 8, then DSSI bus termination is accomplished by using a DSSI terminator (PN 12-31281-01).
- Split-bus mode is supported only in the single-system configuration.

DECarray Cabling Information

A.1 Single-System Configurations for DECarray with SF7x Enclosures

Table A-1 Cabling SF7x in DECarray Single-System Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
BA/BD	1	Terminator		DECarray I/O port P1	BC21R-5L
CA/CD (with tape ISEs)	1	Terminator		Bottom connector of TF8x in position 5	BC21Q-3F
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	6	Terminator		DECarray I/O port P2	BC21R-5L
FA/FD (without tape ISE)	1	Terminator		DECarray I/O port P1	BC21R-5L
	2	Terminator		DECarray I/O port P2	BC21R-5L
FA/FD (with one tape ISE)	1	Terminator		Bottom connector of TF8x in position 5	BC21Q-3F
	2	Terminator		DECarray I/O port P2	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information
A.1 Single-System Configurations for DECarray with SF7x Enclosures

Table A-1 (Cont.) Cabling SF7x in DECarray Single-System Configurations

DECarray Variant	Position Number	Left DSSI Connector to:¹	Using Cable:	Right DSSI Connector to:²	Using Cable:
FA/FD (with two tape ISEs)	1	Terminator		Bottom connector of TF8x in position 5	BC21Q-3F
	2	Terminator		Bottom connector of TF8x in position 6	BC21Q-3F
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	6	Right connector of SF7x in position 2	BC21Q-3F	DECarray I/O port P2	BC21R-5L
HA/HD (without tape ISE)	1	Right connector of SF7x in position 3	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	2	Left connector of SF7x enclosure in position 3	BC21Q-3F	DECarray I/O port P2	BC21R-5L
	3	Left connector of SF7x in position 2	BC21Q-3F	Left connector of SF7x in position 1	BC21Q-3F
HA/HD (with one tape ISE)	1	Right connector of SF7x in position 3	BC21Q-3F	Bottom connector of TF8x in position 5	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information

A.1 Single-System Configurations for DECarray with SF7x Enclosures

Table A-1 (Cont.) Cabling SF7x in DECarray Single-System Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
	2	Left connector of SF7x enclosure in position 3	BC21Q-3F	DECarray I/O port P2	BC21R-5L
	3	Left connector of SF7x in position 2	BC21Q-3F	Left connector of SF7x in position 1	BC21Q-3F
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
HA/HD (with two tape ISEs)	1	Right connector of SF7x in position 3	BC21Q-3F	Bottom connector of TF8x in position 5	BC21R-5L
	2	Left connector of SF7x enclosure in position 3	BC21Q-3F	Bottom connector of TF8x in position 6	BC21Q-3F
	3	Left connector of SF7x in position 2	BC21Q-3F	Left connector of SF7x in position 1	BC21Q-3F
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	6	Right connector of SF7x in position 2	BC21Q-3F	DECarray I/O port P2	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information
A.1 Single-System Configurations for DECarray with SF7x Enclosures

Table A-1 (Cont.) Cabling SF7x in DECarray Single-System Configurations

DECarray Variant	Position Number	Left DSSI Connector to:¹	Using Cable:	Right DSSI Connector to:²	Using Cable:
HA/HD (plus SF7x, without tape ISE)	1	Right connector of SF7x in position 3	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	2	Left connector of SF7x enclosure in position 3	BC21Q-3F	DECarray I/O port P2	BC21R-5L
	3	Left connector of SF7x in position 2	BC21Q-3F	Left connector of SF7x in position 1	BC21Q-3F
	4	Terminator		DECarray I/O port P3	BC21R-5L
HA/HD (plus SF7x, with one tape ISE)	1	Right connector of SF7x in position 3	BC21Q-3F	Bottom connector of TF8x in position 5	BC21R-5L
	2	Left connector of SF7x enclosure in position 3	BC21Q-3F	DECarray I/O port P2	BC21R-5L
	3	Left connector of SF7x in position 2	BC21Q-3F	Left connector of SF7x in position 1	BC21Q-3F
	4	Terminator		DECarray I/O port P3	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information

A.1 Single-System Configurations for DECarray with SF7x Enclosures

Table A-1 (Cont.) Cabling SF7x in DECarray Single-System Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
HA/HD (plus SF7x, with two tape ISEs)	1	Right connector of SF7x in position 3	BC21Q-3F	Bottom connector of TF8x in position 5	BC21R-5L
	2	Left connector of SF7x enclosure in position 3	BC21Q-3F	Bottom connector of TF8x in position 6	BC21Q-3F
	3	Left connector of SF7x in position 2	BC21Q-3F	Left connector of SF7x in position 1	BC21Q-3F
	4	Terminator		DECarray I/O port P3	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	6	Right connector of SF7x in position 2	BC21Q-3F	DECarray I/O port P2	BC21R-5L
HA/HD (plus two SF7x, without tape ISE)	1	Right connector of SF7x in position 3	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	2	Left connector of SF7x enclosure in position 3	BC21Q-3F	DECarray I/O port P2	BC21R-5L
	3	Left connector of SF7x in position 2	BC21Q-3F	Left connector of SF7x in position 1	BC21Q-3F

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information
A.1 Single-System Configurations for DECarray with SF7x Enclosures

Table A-1 (Cont.) Cabling SF7x in DECarray Single-System Configurations

DECarray Variant	Position Number	Left DSSI Connector to:¹	Using Cable:	Right DSSI Connector to:²	Using Cable:
	4	Terminator		DECarray I/O port P3	BC21R-5L
	7	Terminator		DECarray I/O port P4	BC21R-5L
HA/HD (plus two SF7x, with one tape ISE)	1	Right connector of SF7x in position 3	BC21Q-3F	Bottom connector of TF8x in position 5	BC21R-5L
	2	Left connector of SF7x enclosure in position 3	BC21Q-3F	DECarray I/O port P2	BC21R-5L
	3	Left connector of SF7x in position 2	BC21Q-3F	Left connector of SF7x in position 1	BC21Q-3F
	4	Terminator		DECarray I/O port P3	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	7	Terminator		DECarray I/O port P4	BC21R-5L
HA/HD (plus SF7x, with two tape ISEs)	1	Right connector of SF7x in position 3	BC21Q-3F	Bottom connector of TF8x in position 5	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information

A.1 Single-System Configurations for DECarray with SF7x Enclosures

Table A–1 (Cont.) Cabling SF7x in DECarray Single-System Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
	2	Left connector of SF7x enclosure in position 3	BC21Q–3F	Bottom connector of TF8x in position 6	BC21Q–3F
	3	Left connector of SF7x in position 2	BC21Q–3F	Left connector of SF7x in position 1	BC21Q–3F
	4	Terminator		DECarray I/O port P3	BC21R–5L
	5	Right connector of SF7x in position 1	BC21Q–3F	DECarray I/O port P1	BC21R–5L
	6	Right connector of SF7x in position 2	BC21Q–3F	DECarray I/O port P2	BC21R–5L
	7	Terminator		DECarray I/O port P4	BC21R–5L
JA/JD (without tape ISE)	1	Right connector of SF7x in position 3	BC21Q–3F	DECarray I/O port P1	BC21R–5L
	2	Left connector of SF7x enclosure in position 3	BC21Q–3F	DECarray I/O port P2	BC21R–5L
	3	Left connector of SF7x in position 2	BC21Q–3F	Left connector of SF7x in position 1	BC21Q–3F
	4	Left connector of SF7x in position 8	BC21Q–3F	DECarray I/O port P3	BC21R–5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information

A.1 Single-System Configurations for DECarray with SF7x Enclosures

Table A-1 (Cont.) Cabling SF7x in DECarray Single-System Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
	7	Right connector of SF7x in position 8	BC21Q-3F	DECarray I/O port P4	BC21R-5L
	8	Left connector of SF7x ISE in position 4	BC21Q-3F	Left connector of SF7x in position 7	BC21Q-3F
JA/JD (with one tape ISE)	1	Right connector of SF7x in position 3	BC21Q-3F	Bottom connector of TF8x in position 5	BC21R-5L
	2	Left connector of SF7x enclosure in position 3	BC21Q-3F	DECarray I/O port P2	BC21R-5L
	3	Left connector of SF7x in position 2	BC21Q-3F	Left connector of SF7x in position 1	BC21Q-3F
	4	Left connector of SF7x in position 8	BC21Q-3F	DECarray I/O port P3	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	7	Right connector of SF7x in position 8	BC21Q-3F	DECarray I/O port P4	BC21R-5L
	8	Left connector of SF7x ISE in position 4	BC21Q-3F	Left connector of SF7x in position 7	BC21Q-3F

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information

A.1 Single-System Configurations for DECarray with SF7x Enclosures

Table A-1 (Cont.) Cabling SF7x in DECarray Single-System Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
JA/JD (with two tape ISEs)	1	Right connector of SF7x in position 3	BC21Q-3F	Bottom connector of TF8x in position 5	BC21R-5L
	2	Bottom connector of TF8x in position 6	BC21Q-3F	Left connector of SF7x enclosure in position 3	BC21Q-3F
	3	Right connector of SF7x in position 2	BC21Q-3F	Left connector of SF7x in position 1	BC21Q-3F
	4	Left connector of SF7x in position 8	BC21Q-3F	DECarray I/O port P3	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	6	Left connector of SF7x in position 2	BC21Q-3F	DECarray I/O port P2	BC21R-5L
	7	Right connector of SF7x in position 8	BC21Q-3F	DECarray I/O port P4	BC21R-5L
	8	Left connector of SF7x ISE in position 4	BC21Q-3F	Left connector of SF7x in position 7	BC21Q-3F
TA/TD (one tape ISE)	5	Terminator		DECarray I/O port P1	BC21R-5L
TA/TD (two tape ISEs)	5	Terminator		DECarray I/O port P1	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information
A.1 Single-System Configurations for DECarray with SF7x Enclosures

Table A-1 (Cont.) Cabling SF7x in DECarray Single-System Configurations

DECarray Variant	Position Number	Left DSSI Connector to:¹	Using Cable:	Right DSSI Connector to:²	Using Cable:
	6	Terminator		DECarray I/O port P2	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

DECarray Cabling Information

A.2 DSSI VAXcluster Configurations

A.2 DSSI VAXcluster Configurations

Table A-2 contains cabling information for DECarray variations in a DSSI VAXcluster configuration.

Note the following:

- DSSI bus termination is supplied by the KFMSA modules installed in each host system.
- All KFMSA modules installed in each host system must be set to the same DSSI ID.
- All SF7x storage enclosures operate in through-bus mode.

DECarray Cabling Information A.2 DSSI VAXcluster Configurations

Table A-2 Cabling SF7x in DECarray DSSI VAXcluster Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
BE/BH	1	DECarray I/O port P9	BC21R-5L	DECarray I/O port P1	BC21R-5L
CE/CH (with one tape ISE)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
CE/CH (with two tape ISEs)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	6	DECarray I/O port P10	BC21R-5L	DECarray I/O port P2	BC21R-5L
FE/FH (without tape ISE)	1	DECarray I/O port P9	BC21R-5L	DECarray I/O port P1	BC21R-5L
	2	DECarray I/O port P10	BC21R-5L	DECarray I/O port P2	BC21R-5L
FE/FH (with one tape ISE)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information
A.2 DSSI VAXcluster Configurations

Table A-2 (Cont.) Cabling SF7x in DECarray DSSI VAXcluster Configurations

DECarray Variant	Position Number	Left DSSI Connector to:¹	Using Cable:	Right DSSI Connector to:²	Using Cable:
	2	DECarray I/O port P10	BC21R-5L	DECarray I/O port P2	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
FE/FH (with two tape ISEs)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F
	2	DECarray I/O port P10	BC21R-5L	Bottom connector of TF8x in position 6	BC21Q-3F
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	6	Right connector of SF7x in position 2	BC21Q-3F	DECarray I/O port P2	BC21R-5L
HE/HH (without tape ISE)	1	DECarray I/O port P9	BC21R-5L	DECarray I/O port P1	BC21R-5L
	2	DECarray I/O port P10	BC21R-5L	DECarray I/O port P2	BC21R-5L
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information A.2 DSSI VAXcluster Configurations

Table A-2 (Cont.) Cabling SF7x in DECarray DSSI VAXcluster Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
HE/HH (with one tape ISE)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F
	2	DECarray I/O port P10	BC21R-5L	DECarray I/O port P2	BC21R-5L
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
HH/HH (with two tape ISEs)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F
	2	Bottom connector of TF8x in position 6	BC21Q-3F	DECarray I/O port P10	BC21R-5L
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	6	Left connector of SF7x in position 2	BC21Q-3F	DECarray I/O port P2	BC21R-5L
HE/HH (plus SF7x, without tape ISE)	1	DECarray I/O port P9	BC21R-5L	DECarray I/O port P1	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information
A.2 DSSI VAXcluster Configurations

Table A-2 (Cont.) Cabling SF7x in DECarray DSSI VAXcluster Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
	2	DECarray I/O port P10	BC21R-5L	DECarray I/O port P2	BC21R-5L
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L
	4	DECarray I/O port P12	BC21R-5L	DECarray I/O port P4	BC21R-5L
HE/HH (plus SF7x, with one tape ISE)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F
	2	DECarray I/O port P10	BC21R-5L	DECarray I/O port P2	BC21R-5L
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L
	4	DECarray I/O port P12	BC21R-5L	DECarray I/O port P4	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
HE/HH (plus SF7x, with two tape ISEs)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F
	2	Bottom connector of TF8x in position 6	BC21Q-3F	DECarray I/O port P10	BC21R-5L
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L
	4	DECarray I/O port P12	BC21R-5L	DECarray I/O port P4	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information A.2 DSSI VAXcluster Configurations

Table A-2 (Cont.) Cabling SF7x in DECarray DSSI VAXcluster Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	6	Left connector of SF7x in position 2	BC21Q-3F	DECarray I/O port P2	BC21R-5L
HE/HH (plus two SF7x, without tape ISE)	1	DECarray I/O port P9	BC21R-5L	DECarray I/O port P1	BC21R-5L
	2	DECarray I/O port P10	BC21R-5L	DECarray I/O port P2	BC21R-5L
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L
	4	DECarray I/O port P12	BC21R-5L	DECarray I/O port P4	BC21R-5L
	7	DECarray I/O port P13	BC21R-5L	DECarray I/O port P5	BC21R-5L
HE/HH (plus two SF7x, with one tape ISE)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F
	2	DECarray I/O port P10	BC21R-5L	DECarray I/O port P2	BC21R-5L
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L
	4	DECarray I/O port P12	BC21R-5L	DECarray I/O port P4	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

(continued on next page)

DECarray Cabling Information

A.2 DSSI VAXcluster Configurations

Table A-2 (Cont.) Cabling SF7x in DECarray DSSI VAXcluster Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	7	DECarray I/O port P13	BC21R-5L	DECarray I/O port P5	BC21R-5L
HE/HH (plus two SF7x, with two tape ISEs)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F
	2	Bottom connector of TF8x in position 6	BC21Q-3F	DECarray I/O port P10	BC21R-5L
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L
	4	DECarray I/O port P12	BC21R-5L	DECarray I/O port P4	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	6	Left connector of SF7x in position 2	BC21Q-3F	DECarray I/O port P2	BC21R-5L
	7	DECarray I/O port P13	BC21R-5L	DECarray I/O port P5	BC21R-5L
JE/JH (without tape ISE)	1	DECarray I/O port P9	BC21R-5L	DECarray I/O port P1	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

(continued on next page)

DECarray Cabling Information A.2 DSSI VAXcluster Configurations

Table A-2 (Cont.) Cabling SF7x in DECarray DSSI VAXcluster Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
	2	DECarray I/O port P10	BC21R-5L	DECarray I/O port P2	BC21R-5L
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L
	4	DECarray I/O port P12	BC21R-5L	DECarray I/O port P4	BC21R-5L
	7	DECarray I/O port P13	BC21R-5L	DECarray I/O port P5	BC21R-5L
	8	DECarray I/O port P14	BC21R-5L	DECarray I/O port P6	BC21R-5L
JE/JH (with one tape ISE)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F
	2	DECarray I/O port P10	BC21R-5L	DECarray I/O port P2	BC21R-5L
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L
	4	DECarray I/O port P12	BC21R-5L	DECarray I/O port P4	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	7	DECarray I/O port P13	BC21R-5L	DECarray I/O port P5	BC21R-5L
	8	DECarray I/O port P14	BC21R-5L	DECarray I/O port P6	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information
A.2 DSSI VAXcluster Configurations

Table A-2 (Cont.) Cabling SF7x in DECarray DSSI VAXcluster Configurations

DECarray Variant	Position Number	Left DSSI Connector to:¹	Using Cable:	Right DSSI Connector to:²	Using Cable:
JE/JH (with two tape ISEs)	1	DECarray I/O port P9	BC21R-5L	Bottom connector of TF8x in position 5	BC21Q-3F
	2	DECarray I/O port P10	BC21R-5L	Bottom connector of TF8x in position 6	BC21Q-3F
	3	DECarray I/O port P11	BC21R-5L	DECarray I/O port P3	BC21R-5L
	4	DECarray I/O port P12	BC21R-5L	DECarray I/O port P4	BC21R-5L
	5	Right connector of SF7x in position 1	BC21Q-3F	DECarray I/O port P1	BC21R-5L
	6	Right connector of SF7x in position 2	BC21Q-3F	DECarray I/O port P2	BC21R-5L
	7	DECarray I/O port P13	BC21R-5L	DECarray I/O port P5	BC21R-5L
	8	DECarray I/O port P14	BC21R-5L	DECarray I/O port P6	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

DECarray Cabling Information
A.3 Stripeset Configurations with SF7x Enclosures

A.3 Stripeset Configurations with SF7x Enclosures

Table A–3 contains cabling information for DECarray stripeset configurations using SF7x enclosures.

Note the following:

- The SF7x storage enclosures must be operating in split-bus mode.
- DSSI bus termination is supplied by the TTM module inside the SF7x storage enclosures.
- If a DSSI bus is not connected to a SF7x storage enclosure, then DSSI bus termination is accomplished by using a DSSI terminator (PN 12–31281–01).
- Stripesets are supported only in a single-system configuration.

Table A–3 Cabling SF7x in DECarray Stripeset Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
All variants	1	DECarray I/O port P2	BC21R–5L	DECarray I/O port P1	BC21R–5L
	2	DECarray I/O port P4	BC21R–5L	DECarray I/O port P3	BC21R–5L
	3	DECarray I/O port P6	BC21R–5L	DECarray I/O port P5	BC21R–5L
	4	DECarray I/O port P8	BC21R–5L	DECarray I/O port P7	BC21R–5L
	5	Terminator		DECarray I/O port P16	BC21R–5L
	6	Terminator		DECarray I/O port P15	BC21R–5L
	7	DECarray I/O port P10	BC21R–5L	DECarray I/O port P9	BC21R–5L
	8	DECarray I/O port P12	BC21R–5L	DECarray I/O port P11	BC21R–5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

DECarray Cabling Information

A.4 DECarray Configurations with SF3x Enclosures in Through-Bus Mode

A.4 DECarray Configurations with SF3x Enclosures in Through-Bus Mode

Table A-4 contains cabling information for DECarray variations containing SF3x enclosures in through-bus mode.

Through-bus configurations are cabled the same way for both single-system and DSSI VAXcluster configurations.

Table A-4 Cabling SF3x in DECarray Through-Bus Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
BA/BD	1 rear	Terminator		DECarray I/O port P9	BC21R-5L
BA/BD (with tape ISEs)	1 rear	Terminator		Bottom connector of TF8x in position 5	BC21Q-3F
	5	Right connector of SF3x in position 1 (rear)	BC21Q-3F	DECarray I/O port P9	BC21R-5L
CA/CD (without tape ISE)	1 rear	Terminator		DECarray I/O port P9	BC21R-5L
	1 front	Terminator		DECarray I/O port P10	BC21R-5L
CA/CD (with tape ISE)	1 rear	Terminator		Bottom connector of TF8x in position 5	BC21Q-3F

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information

A.4 DECarray Configurations with SF3x Enclosures in Through-Bus Mode

Table A-4 (Cont.) Cabling SF3x in DECarray Through-Bus Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
	1 front	Terminator		DECarray I/O port P10	BC21R-5L
	5	Right connector of SF3x in position 1 (rear)	BC21Q-3F	DECarray I/O port P9	BC21R-5L
FA/FD (without tape ISE)	1 rear	Terminator		DECarray I/O port P9	BC21R-5L
	1 front	Terminator		DECarray I/O port P10	BC21R-5L
	2 rear	DECarray I/O port P1	BC21R-5L	Terminator	
	2 front	DECarray I/O port P2	BC21R-5L	Terminator	
FA/FD (with tape ISE)	1 rear	Terminator		Bottom connector of TF8x in position 5	BC21Q-3F
	1 front	Terminator		DECarray I/O port P10	BC21R-5L
	2 rear	DECarray I/O port P1	BC21R-5L	Terminator	
	2 front	DECarray I/O port P2	BC21R-5L	Terminator	

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information

A.4 DECarray Configurations with SF3x Enclosures in Through-Bus Mode

Table A-4 (Cont.) Cabling SF3x in DECarray Through-Bus Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
	5	Right connector of SF3x in position 1 (rear)	BC21Q-3F	DECarray I/O port P9	BC21R-5L
HA/HD (without tape ISE)	1 rear	Terminator		DECarray I/O port P9	BC21R-5L
	1 front	Terminator		DECarray I/O port P10	BC21R-5L
	2 rear	DECarray I/O port P1	BC21R-5L	Terminator	
	2 front	DECarray I/O port P2	BC21R-5L	Terminator	
	3 rear	Terminator		DECarray I/O port P11	BC21R-5L
	3 front	Terminator		DECarray I/O port P12	BC21R-5L
HA/HD (with tape ISE)	1 rear	Terminator		Bottom connector of TF8x in position 5	BC21Q-3F
	1 front	Terminator		DECarray I/O port P10	BC21R-5L
	2 rear	DECarray I/O port P1	BC21R-5L	Terminator	
	2 front	DECarray I/O port P2	BC21R-5L	Terminator	

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information

A.4 DECarray Configurations with SF3x Enclosures in Through-Bus Mode

Table A-4 (Cont.) Cabling SF3x in DECarray Through-Bus Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
	3 rear	Terminator		DECarray I/O port P11	BC21R-5L
	3 front	Terminator		DECarray I/O port P12	BC21R-5L
	5	Right connector of SF3x in position 1 (rear)	BC21Q-3F	DECarray I/O port P9	BC21R-5L
JA/JD (without tape ISE)	1 rear	Terminator		DECarray I/O port P9	BC21R-5L
	1 front	Terminator		DECarray I/O port P10	BC21R-5L
	2 rear	DECarray I/O port P1	BC21R-5L	Terminator	
	2 front	DECarray I/O port P2	BC21R-5L	Terminator	
	3 rear	Terminator		DECarray I/O port P11	BC21R-5L
	3 front	Terminator		DECarray I/O port P12	BC21R-5L
	4 rear	DECarray I/O port P3	BC21R-5L	Terminator	
	4 front	DECarray I/O port P4	BC21R-5L	Terminator	
	7 rear	Terminator		DECarray I/O port P13	BC21R-5L
	7 front	Terminator		DECarray I/O port P14	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information

A.4 DECarray Configurations with SF3x Enclosures in Through-Bus Mode

Table A-4 (Cont.) Cabling SF3x in DECarray Through-Bus Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:
	8 rear	DECarray I/O port P5	BC21R-5L	Terminator	
	8 front	DECarray I/O port P6	BC21R-5L	Terminator	
JA/JD (with one tape ISE)	1 rear	Terminator		Bottom connector of TF8x in position 5	BC21Q-3F
	1 front	Terminator		DECarray I/O port P10	BC21R-5L
	2 rear	DECarray I/O port P1	BC21R-5L	Terminator	
	2 front	DECarray I/O port P2	BC21R-5L	Terminator	
	3 rear	Terminator		DECarray I/O port P11	BC21R-5L
	3 front	Terminator		DECarray I/O port P12	BC21R-5L
	5	Right connector of SF3x in position 1 (rear)	BC21Q-3F	DECarray I/O port P9	BC21R-5L
	7 rear	Terminator		DECarray I/O port P13	BC21R-5L
	7 front	Terminator		DECarray I/O port P14	BC21R-5L
	8 rear	DECarray I/O port P5	BC21R-5L	Terminator	
	8 front	DECarray I/O port P6	BC21R-5L	Terminator	

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

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DECarray Cabling Information

A.4 DECarray Configurations with SF3x Enclosures in Through-Bus Mode

Table A-4 (Cont.) Cabling SF3x in DECarray Through-Bus Configurations

DECarray Variant	Position Number	Left DSSI Connector to: ¹	Using Cable:	Right DSSI Connector to: ²	Using Cable:	
JA/JD (with two tape ISEs)	1 rear	Terminator		Bottom connector of TF8x in position 5	BC21Q-3F	
	1 front	Terminator		Bottom connector of TF8x in position 6	BC21Q-3F	
	2 rear	DECarray I/O port P1	BC21R-5L	Terminator		
	2 front	DECarray I/O port P2	BC21R-5L	Terminator		
	3 rear	Terminator		DECarray I/O port P11	BC21R-5L	
	3 front	Terminator		DECarray I/O port P12	BC21R-5L	
	5	Right connector of SF3x in position 1 (rear)		BC21Q-3F	DECarray I/O port P9	BC21R-5L
	6	Right connector of SF3x in position 1 (front)		BC21Q-3F	DECarray I/O port P10	BC21R-5L
	7 rear	Terminator		DECarray I/O port P13	BC21R-5L	
	7 front	Terminator		DECarray I/O port P14	BC21R-5L	
	8 rear	DECarray I/O port P5		BC21R-5L	Terminator	

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

(continued on next page)

DECarray Cabling Information

A.4 DECarray Configurations with SF3x Enclosures in Through-Bus Mode

Table A-4 (Cont.) Cabling SF3x in DECarray Through-Bus Configurations

DECarray Variant	Position Number	Left DSSI Connector to:¹	Using Cable:	Right DSSI Connector to:²	Using Cable:
	8 front	DECarray I/O port P6	BC21R-5L	Terminator	

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

DECarray Cabling Information

A.5 DECarray Configurations with SF3x Enclosures in Split-Bus Mode

A.5 DECarray Configurations with SF3x Enclosures in Split-Bus Mode

Table A-5 contains cabling information for DECarray variations containing SF3x enclosures in split-bus mode.

DSSI bus termination is accomplished by attaching a terminator (PN 12-28976-01) to the backplane connectors P9 & P10 (Section 5.5.2).

Table A-5 Cabling SF3x in DECarray Split-Bus Configurations

DECarray Variant	Position Number	Left DSSI Connector to:¹	Using Cable:	Right DSSI Connector to:²	Using Cable:
All variants	1 rear	DECarray I/O port P9	BC21R-5L	DECarray I/O port P10	BC21R-5L
	1 front	DECarray I/O port P11	BC21R-5L	DECarray I/O port P12	BC21R-5L
	2 rear	DECarray I/O port P1	BC21R-5L	DECarray I/O port P2	BC21R-5L
	2 front	DECarray I/O port P3	BC21R-5L	DECarray I/O port P4	BC21R-5L
	3 rear	DECarray I/O port P13	BC21R-5L	DECarray I/O port P14	BC21R-5L
	3 front	DECarray I/O port P15	BC21R-5L	DECarray I/O port P16	BC21R-5L
	4 rear	DECarray I/O port P5	BC21R-5L	DECarray I/O port P6	BC21R-5L
	4 front	DECarray I/O port P7	BC21R-5L	DECarray I/O port P8	BC21R-5L

¹Bottom DSSI connector when referring to tape ISE in position 5 or 6.

²Top DSSI connector when referring to tape ISE in position 5 or 6.

B

Installing an SF3x-HK and SF7x-UK Upgrade Kit

This appendix describes how to install the SF7x-UK and SF3x-UK upgrade kits while the host system and the disk ISEs storage enclosure are off-line. Refer to Section B.1 for instructions on how to take a disk ISE off-line.

To ensure the integrity of the host system, follow the steps in this procedure in order and exactly as instructed.

Note

You must upgrade the two-drive SF7x-HK storage enclosure to contain four drives before adding any other SF7x storage enclosures on that bus of the DECarray.

Only one SF7x-HK storage enclosure can exist in a DECarray at one time.

The following procedure assumes that the DECarray, and the SF7x storage enclosures and magazine tape ISEs in the array, have been correctly installed and configured.

Locate the system configuration sheet and ensure that it is filled out properly. If the system configuration sheet reflects a configuration other than what is recommended in this guide, you must maintain that particular configuration throughout this procedure and work to ensure that no two devices on a DSSI bus have the same DSSI ID number.

If this upgrade is to be followed by the installation of another SF7x storage enclosure, a magazine tape ISE, or both, the host system must be brought down according to the system documentation.

Installing an SF3x-HK and SF7x-UK Upgrade Kit

B.1 Securing the Array for the Upgrade

B.1 Securing the Array for the Upgrade

Once the host systems have been correctly brought down, perform the following steps:

1. Take each ISE installed in the DECarray off-line.
 - a. For all SF3x and SF7x storage enclosures, press all OCP Ready buttons to their out position.
 - b. For all magazine tape ISEs, press the Load/Unload button. Wait until the cartridge is returned to the magazine and the In-Use LED is extinguished.
2. For all SF3x and SF7x storage enclosures, press all drive dc power switches to their out position.
3. For all SF3x and SF7x storage enclosures and magazine tape ISEs, turn the ac power switches at the rear of each to their 0 or off position.
4. At the rear of the array, turn the power controller circuit breaker off.

Installing an SF3x-HK and SF7x-UK Upgrade Kit
B.2 Installing an RF3x ISE into an SF3x-HK Storage Enclosure

B.2 Installing an RF3x ISE into an SF3x-HK Storage Enclosure

This section describes how to install two RF3x disk ISEs into an SF3x-HK storage enclosure.

CAUTION

Do not disconnect or disturb the existing DSSI cables and terminators on the present SF3x storage enclosures, magazine tape ISEs, or on the DECarray I/O panel.

Customer data corruption could result.

CAUTION

Take all possible ESD precautions when unpacking the disk ISEs. Wear a correctly grounded ESD strap.

CAUTION

Only one SF3x storage enclosure inner assembly should be extended on the slide mount at a time.

The following steps describe how to install the two-drive SF3x-UK upgrade into an SF3x-HK storage enclosure with two RF3x disk drives. The upgrade includes the two RF3x disk ISEs to be installed in the two front positions of an SF3x-HK enclosure.

1. To unpack a disk ISE:
 - a. Open the shipping carton.
 - b. Remove the disk ISE wrapped in the protective wrapper.
 - c. Open the protective wrapper and remove the disk ISE. Discard the desiccant bags.
 - d. Place the disk ISE on the protective wrapper.

Installing an SF3x-HK and SF7x-UK Upgrade Kit

B.2 Installing an RF3x ISE into an SF3x-HK Storage Enclosure

2. Install the disk ISEs.

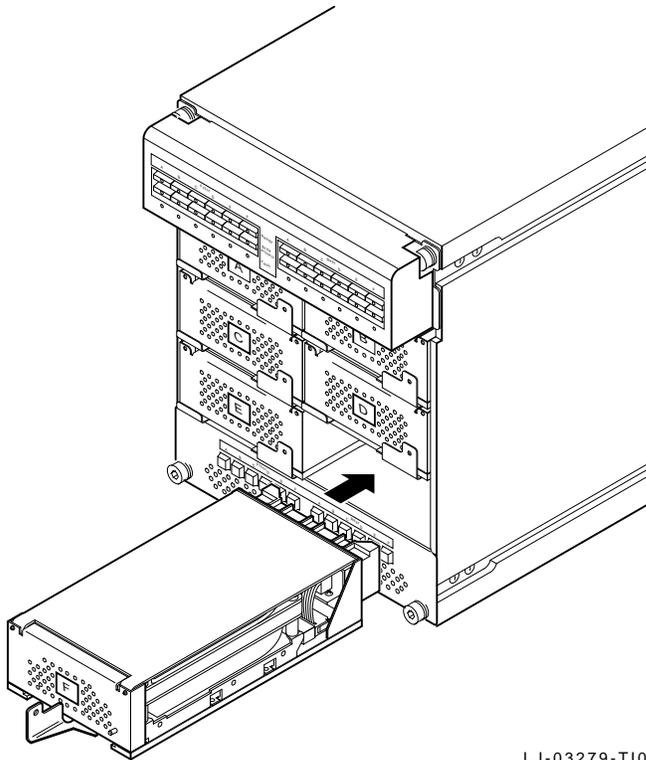
CAUTION

Take all possible ESD precautions when handling the disk ISEs. Wear a correctly grounded ESD strap.

- a. Remove the SF3x storage enclosure front cover.
- b. Position the disk ISE as shown in Figure B-1 and install the disk ISE in the enclosure. Slide the disk ISE gently into place, push lever to the side to fully engage drive, install screw to secure drive.

Installing an SF3x-HK and SF7x-UK Upgrade Kit
B.2 Installing an RF3x ISE into an SF3x-HK Storage Enclosure

Figure B-1 RF3x Disk ISE Orientation



LJ-03279-T10

Installing an SF3x-HK and SF7x-UK Upgrade Kit
B.3 Installing an RF7x ISE into an SF7x-HK Storage Enclosure

B.3 Installing an RF7x ISE into an SF7x-HK Storage Enclosure

This section describes how to install two RF7x disk ISEs into an SF7x-HK storage enclosure.

CAUTION

Do not disconnect or disturb the existing DSSI cables and terminators on the present SF7x storage enclosures, magazine tape ISEs, or on the DECarray I/O panel.

Customer data corruption could result.

CAUTION

Take all possible ESD precautions when unpacking the disk ISEs. Wear a correctly grounded ESD strap.

CAUTION

Only one SF7x storage enclosure inner assembly should be extended on the slide mount at a time.

The following steps describe how to install the two-drive SF7x-UK upgrade into an SF7x-HK storage enclosure with two RF7x disk drives. The upgrade includes the two RF7x disk ISEs to be installed in the two front positions of an SF7x-HK enclosure.

1. To unpack a disk ISE:
 - a. Open the shipping carton.
 - b. Remove the disk ISE wrapped in the protective wrapper.
 - c. Open the protective wrapper and remove the disk ISE. Discard the desiccant bags.
 - d. Place the disk ISE on the protective wrapper.

Installing an SF3x-HK and SF7x-UK Upgrade Kit
B.3 Installing an RF7x ISE into an SF7x-HK Storage Enclosure

2. Install the disk ISEs.

CAUTION

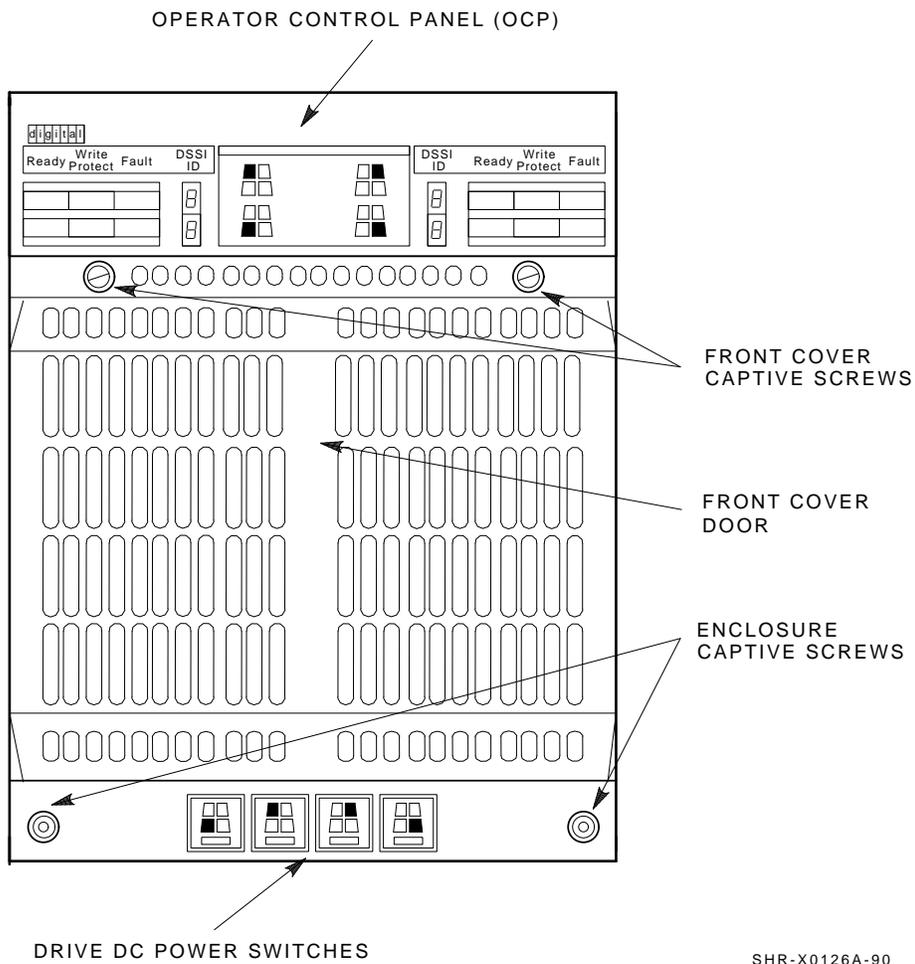
Take all possible ESD precautions when handling the disk ISEs. Wear a correctly grounded ESD strap.

- a. Remove the SF7x storage enclosure front cover (Figure B-2) by loosening the screws and lifting the cover straight off.

Installing an SF3x-HK and SF7x-UK Upgrade Kit

B.3 Installing an RF7x ISE into an SF7x-HK Storage Enclosure

Figure B-2 SF7x Front Cover Removal



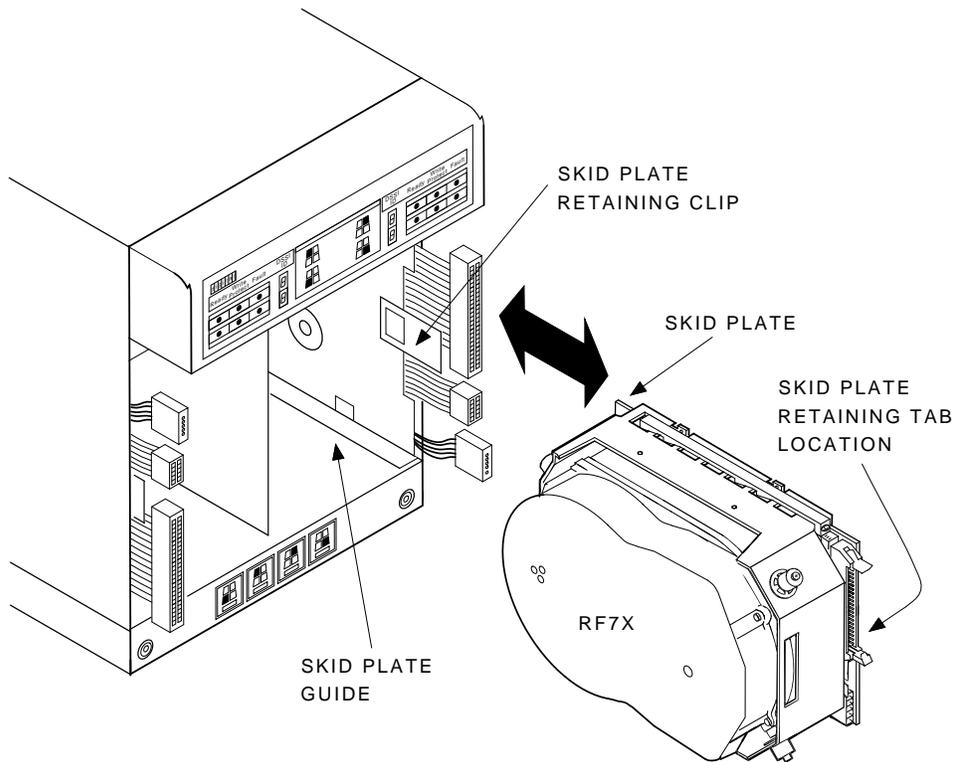
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Installing an SF3x-HK and SF7x-UK Upgrade Kit

B.3 Installing an RF7x ISE into an SF7x-HK Storage Enclosure

- b. Position the disk ISE as shown in Figure B-3 and install the disk ISE in the enclosure. Slide the disk ISE gently into place, while holding all cables out of the way. Do not force the disk ISE.

Figure B-3 RF7x Disk ISE Orientation



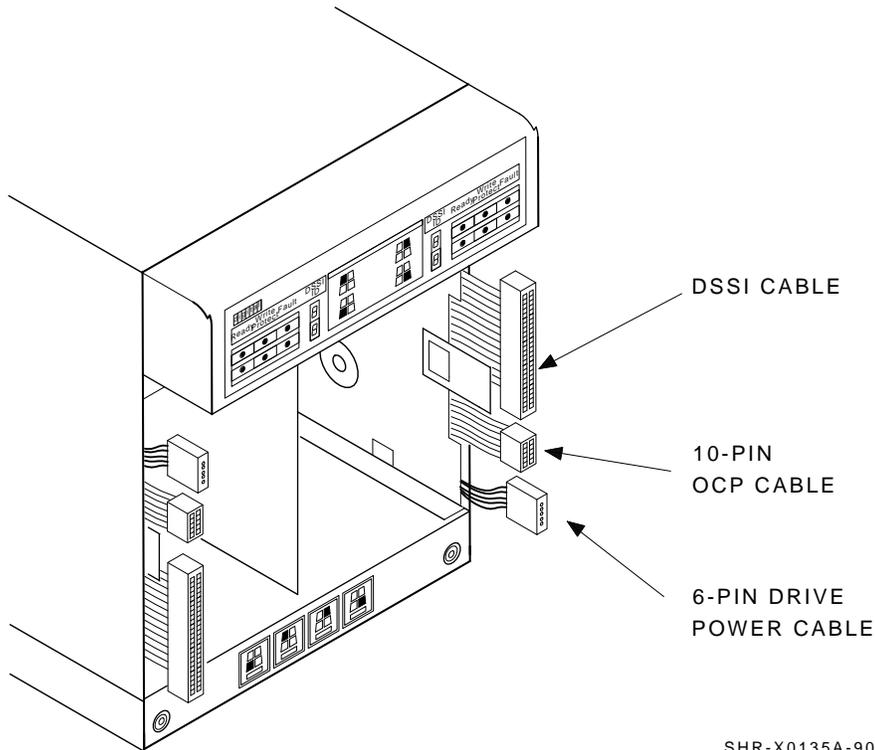
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Installing an SF3x-HK and SF7x-UK Upgrade Kit

B.3 Installing an RF7x ISE into an SF7x-HK Storage Enclosure

- c. Make sure that the disk ISE is locked into place and tighten the wedges.
- d. Connect the cables (Figure B-4) in the following order: 6-pin power cable, 10-pin OCP cable, and 50-pin DSSI cable. The connectors are keyed so that the cables cannot be installed incorrectly.

Figure B-4 Cabling the RF7x Disk ISE

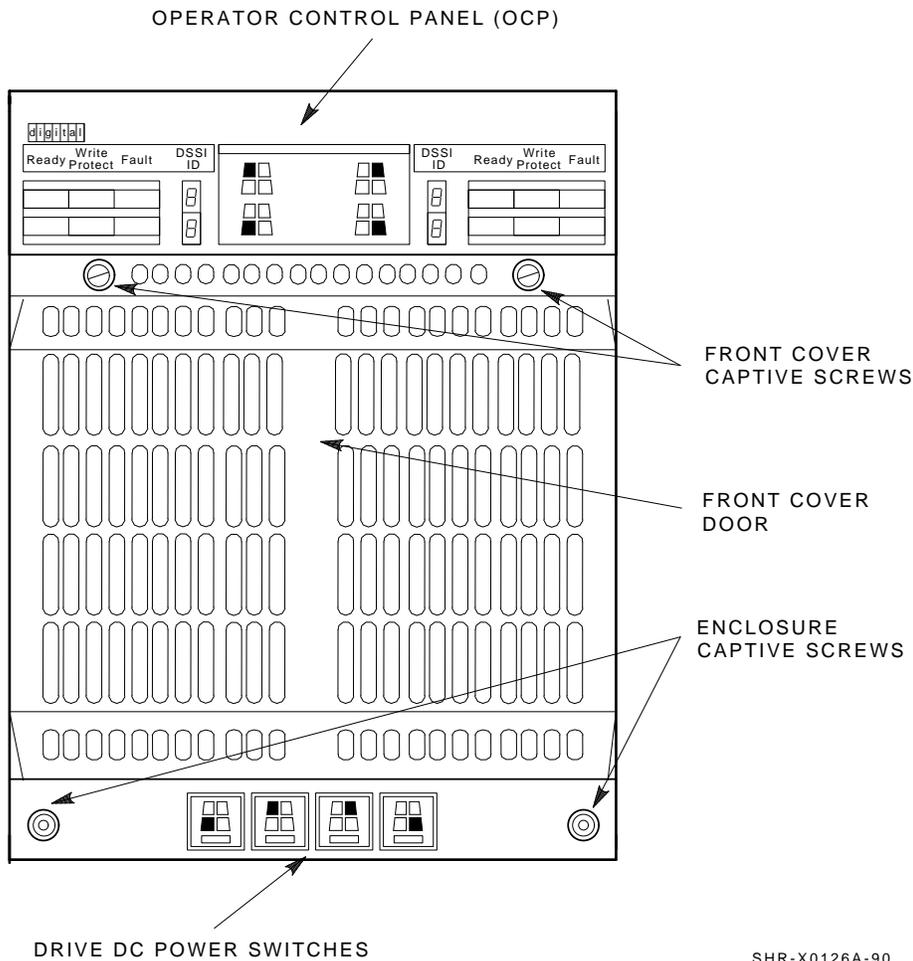


Installing an SF3x-HK and SF7x-UK Upgrade Kit

B.3 Installing an RF7x ISE into an SF7x-HK Storage Enclosure

- e. Replace the front cover on the SF7x storage enclosure (Figure B-5).

Figure B-5 SF7x Front Cover Replacement



Installing an SF3x-HK and SF7x-UK Upgrade Kit

B.4 Powering Up the ISEs

B.4 Powering Up the ISEs

Once all of the previous steps have been performed, use the following steps to power up the ISEs:

1. At the rear of the DECarray cabinet, turn the power controller circuit breaker on.
2. For all SF7x storage enclosures and magazine tape ISEs, turn the ac power switches at the rear of each to their 1 or on position.
3. For all SF7x storage enclosures, press all drive dc power switches to their in position.
4. Place each disk ISE installed in the DECarray on-line by pressing all OCP Ready buttons to their in position.

B.5 Bringing the Disk ISEs On-Line

Refer to your system or DSSI adapter documentation for instructions on configuring a single-system and DSSI VAXcluster configuration.

C

Converting a Single-System Configuration to a DSSI VAXcluster Configuration

This appendix describes how to convert a DECarray, SF7x storage enclosure, or magazine tape ISE that is configured according to single-system configuration guidelines to DSSI VAXcluster configuration guidelines.

Note

This procedure is not necessary for DECarray cabinets using SF3x storage enclosures. In this case, the DSSI VAXcluster configuration only requires the addition of more than one host system to the already existing DECarray configuration.

Ensure that you have the following before starting any procedure:

- A #1 Phillips screwdriver (PN 29-11001-00)
- A 1/8-inch hex key (PN 29-26115-00)
- The *KFMSA Module Installation and User Manual* (EK-KFMSA-IM)
- The *SF Family Label Booklet* (PN 36-32882-01)

Note

The host systems must be taken down to perform any of the steps in this procedure, unless otherwise stated. Before cabling the DECarray to the second host system, run the EVCXF configuration program under VAX/DS and set the DSSI ID number of all KFMSA modules in the second host system to 6. Refer to the *KFMSA Module Installation and User Manual* for instructions on changing the KFMSA module DSSI ID number.

Converting a Single-System Configuration to a DSSI VAXcluster Configuration

CAUTION

The following procedure assumes that the DECarray, and the SF7x storage enclosures and magazine tape ISEs in the DECarray, have been correctly installed and configured according to the standard bus and configuration guidelines in this installation guide.

Locate the system configuration sheet (an example can be found in Figure C-1) and ensure that it is filled out. If the system configuration sheet does not exist, fill one out immediately.

WARNING

Only one SF7x storage enclosure inner assembly should be extended on the slide mount at a time.

Take all possible ESD precautions when performing this procedure. Wear a correctly grounded ESD strap.

Perform each step in the order presented.

Converting a Single-System Configuration to a DSSI VAXcluster Configuration

C.1 Securing the DECarray for Conversion

C.1 Securing the DECarray for Conversion

Once the host systems have been correctly brought down, perform the following steps:

1. Take each ISE installed in the DECarray off-line.
 - a. For all SF7x storage enclosures, press all OCP Ready buttons to their out position.
 - b. For all magazine tape ISEs, press the Load/Unload button. Wait until the cartridge is returned to the magazine and the In-Use LED is extinguished.
2. For all SF7x storage enclosures, press all drive dc power switches to their out position.
3. For all SF7x storage enclosures and magazine tape ISEs, turn the ac power switches located at the rear of each to their 0 or off position.
4. At the rear of the DECarray, turn the power controller circuit breaker off.

Converting a Single-System Configuration to a DSSI VAXcluster Configuration C.2 Conversion Procedure

C.2 Conversion Procedure

This section contains the steps to:

- Convert an SF7x storage enclosure from split-bus to through-bus mode (Section C.2.1)
- Convert a DECarray, cabled for a single-system configuration, that contains SF7x storage enclosures, or magazine tape ISEs, or both, to a DSSI VAXcluster configuration (Section C.2.2)
- Label the cables (Section C.2.3)
 - Fill out a new configuration sheet (Section C.2.3.1)
 - Fill out the labels (Section C.2.3.2)
 - Place the labels (Section C.2.3.3)
- Power up the DECarray (Section C.2.4)
- Bring the new DSSI VAXcluster configuration back on-line (Section C.2.5)
- Verify the operation of the converted DECarray (Section C.2.6)

Follow each step in the order presented.

Converting a Single-System Configuration to a DSSI VAXcluster Configuration

C.2 Conversion Procedure

C.2.1 Split-Bus to Through-Bus Conversion

Use the following steps only if you are converting an SF7x storage enclosure in position 3 or 8 of an DECarray from single-system to DSSI VAXcluster configuration. SF7x storage enclosures in position 3 and 8 *must* be converted to through-bus mode.

CAUTION

Maintain ESD precautions at all times. Before performing the following steps, locate the ESD strap in the ESD pouch at the bottom of the front door.

To maintain stability, extend only one SF7x storage enclosure or magazine tape ISE on the slide mounts at a time.

1. Remove the OCP by firmly grasping the right and left side of the OCP and pulling the OCP straight off.
2. Loosen the four captive slide assembly screws. At the rear, push the inner assembly out until the drawer locks in the service position.

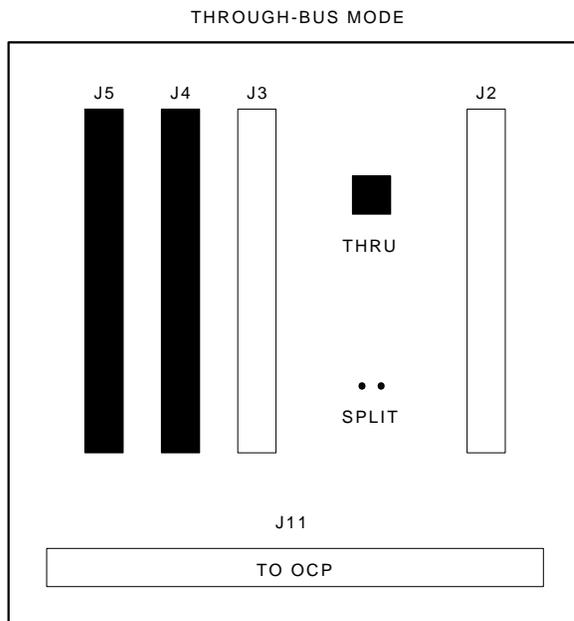
Note

Do NOT completely remove the SF7x inner drawer assembly from the extrusion tube.

3. Reconfigure the TTM for through-bus mode by first moving the small black jumper to the through-bus terminals. Then move the cable connector from J3 to J5, and the cable connector from J2 to J4 (Figure C-2).
4. Push the SF7x inner assembly back into the extrusion tube. To prevent pinching any cables, be sure that all cables are dressed correctly.
5. Tighten the four captive slide assembly screws.
6. Set the DSSI ID number switches behind the OCP front door of positions 3 and 8 to match those in positions 1, 2, 4, and 7 (Table C-1).
7. Replace the OCP by lining up the taps on the back of the OCP with the slots on the front of the storage enclosure. Firmly press the right and left side of the OCP.

Converting a Single-System Configuration to a DSSI VAXcluster Configuration C.2 Conversion Procedure

Figure C-2 Changing an SF7x to Through-Bus Mode



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Table C-1 DSSI ID Switch Settings (SF7x Only)

DECarray Positions 1, 2, 3, 4, 7, and 8

Left Rear (LR)	001	Right Front (RF)	011
Left Front (LF)	010	Right Rear (RR)	100

Converting a Single-System Configuration to a DSSI VAXcluster Configuration

C.2 Conversion Procedure

C.2.2 Single-System to DSSI VAXcluster Cabling Conversion

Note

Ensure that both host systems and the DECarray are off-line and powered down.

This procedure explains the steps to recable a DSSI bus configured for a single-system application to a DSSI bus configured for a DSSI VAXcluster application.

Figure C-3 shows the five possible single-system bus configurations. Figure C-4 shows the three possible DSSI VAXcluster bus configurations.

The steps describe the conversion of each DSSI bus in the DECarray individually. Follow each step for all DSSI buses present in the DECarray, paying careful attention to all warnings, cautions, and notes.

The term *DSSI bus n* (where $n = 1$ to 6) refers to the DSSI buses used by the host system, the DECarray, the SF7x storage enclosures, and the magazine tape ISEs. In the single-system configuration, the four DSSI buses used are:

- DSSI bus 1, color code blue
- DSSI bus 2, color code red
- DSSI bus 3, color code yellow
- DSSI bus 4, color code green

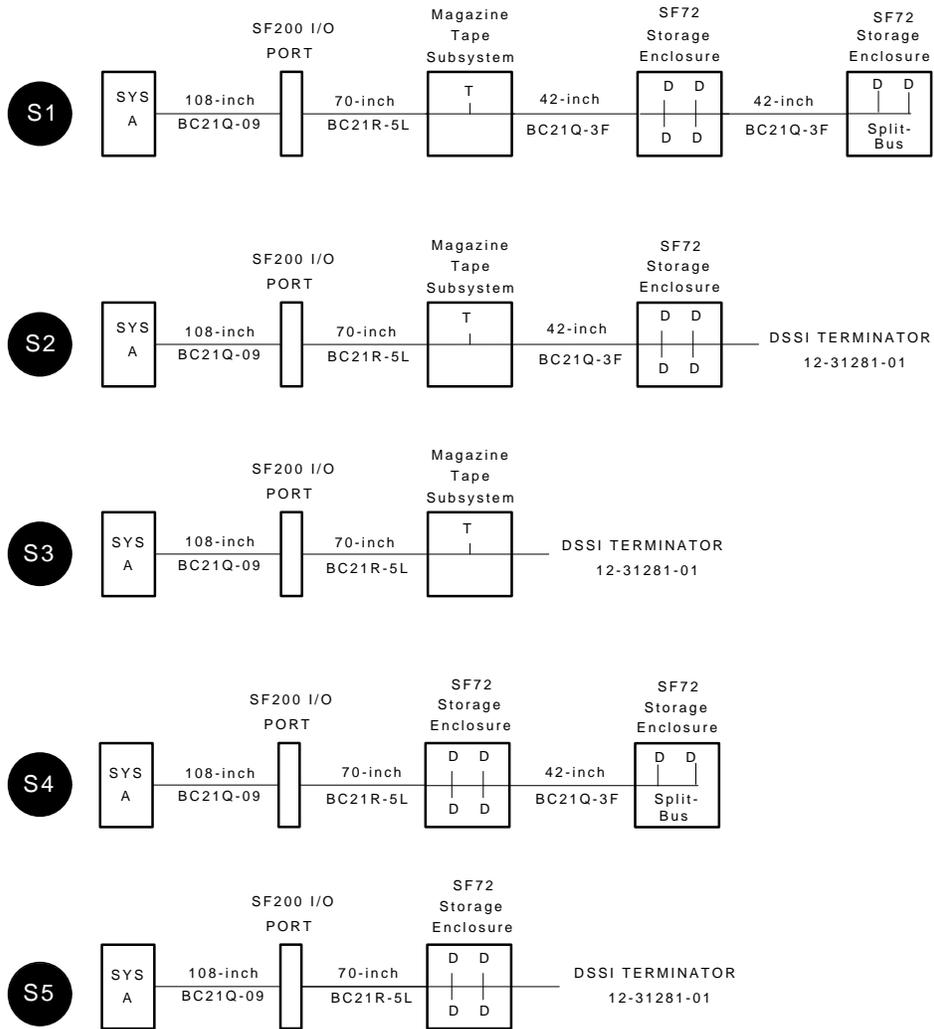
In the DSSI VAXcluster configuration, the six DSSI buses used are:

- DSSI bus 1, color code blue
- DSSI bus 2, color code red
- DSSI bus 3, color code yellow
- DSSI bus 4, color code green
- DSSI bus 5, color code blue with a white stripe
- DSSI bus 6, color code red with a white stripe

Use Table C-2 to convert the existing DECarray from single-system configured DSSI buses to the DSSI VAXcluster configuration and to Figures C-3 and C-4 for the actual bus configuration.

Converting a Single-System Configuration to a DSSI VAXcluster Configuration C.2 Conversion Procedure

Figure C-3 Possible Single-System Bus Configurations

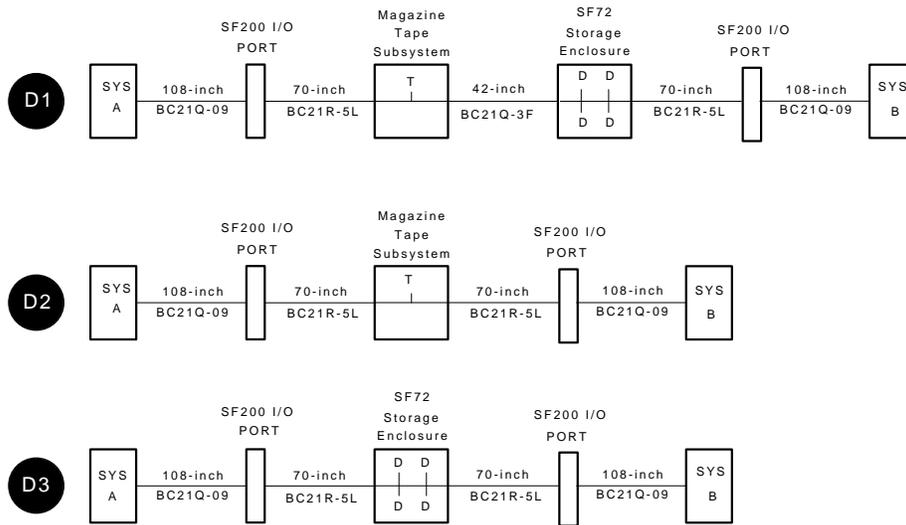


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Converting a Single-System Configuration to a DSSI VAXcluster Configuration

C.2 Conversion Procedure

Figure C-4 Possible DSSI VAXcluster Bus Configurations



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Table C-2 Single-System to DSSI VAXcluster Conversion

Single-System	to	DSSI VAXcluster
S1		D1 ²
S2 ¹		D1
S3 ¹		D2
S4		D3 ²
S5 ¹		D3

¹When converting these buses, remove the DSSI terminator (12-31281-01) and store these terminators in the ESD pouches on the inside of the DECarray front or rear doors.

²Remove the 42-inch DSSI cables between SF7x storage enclosures only. Remember that SF7x storage enclosures in positions 3 and 8 *must* be converted from split-bus to through-bus mode and become a D3 configuration only.

Converting a Single-System Configuration to a DSSI VAXcluster Configuration C.2 Conversion Procedure

CAUTION

Do not disturb any existing DSSI cables unless otherwise instructed.

Do not remove any existing 42-inch DSSI cables (BC21Q-3F) between magazine tape ISEs and SF7x storage enclosures.

Install the 70-inch DSSI cables (BC21R-5L) where necessary to complete the bus connections to the DECarray I/O panel:

1. Connect one end of the 70-inch DSSI cable to the DSSI connector on the rear of the SF7x storage enclosure or magazine tape ISE.
2. Install the other end to the appropriate port on the DECarray I/O panel. Refer to Figure C-5.

Connect the appropriate number of 108-inch DSSI cables (BC21Q-09) to all the newly installed 70-inch DSSI cables on the DECarray I/O panel.

Next, connect the other end of the 108-inch DSSI cables to the appropriate DSSI connector on the system I/O panel.

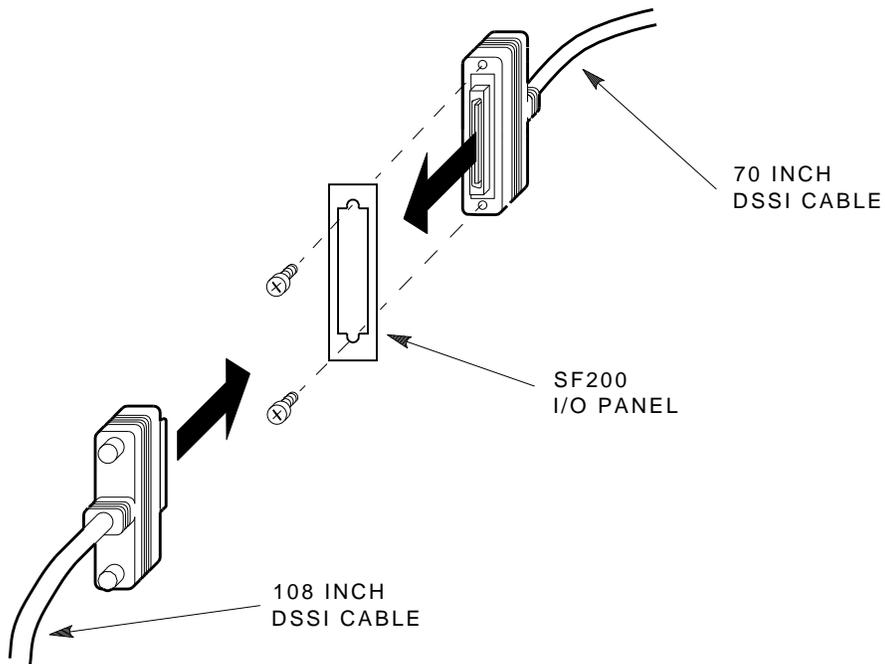
Note

If you have not changed the KFMSA module DSSI ID numbers in the other host system to 6, do so at this time. Do NOT attempt to connect the 108-inch DSSI cables to this host system until the DSSI ID numbers have been changed. Refer to the *KFMSA Module Installation and User Manual*.

Refer to Appendix A for cabling diagrams of the single-system and DSSI VAXcluster configurations.

Converting a Single-System Configuration to a DSSI VAXcluster Configuration C.2 Conversion Procedure

Figure C-5 Connecting DSSI Cables on the DECarray I/O Panel



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Converting a Single-System Configuration to a DSSI VAXcluster Configuration C.2 Conversion Procedure

C.2.3 Labeling the Cables

This section describes how to label correctly the cables for the VAX 6000 series system, the DECarray, and its SF7x storage enclosures and tape magazine ISEs.

At this point, all steps in the previous sections must be complete.

C.2.3.1 Completing the System Configuration Sheet

At this time, you should be ready to fill out the system configuration sheet. An example of the sheet is in Figure C-6 and in the *KFMSA Module Installation and User Manual*. Refer to these examples when filling out the system configuration sheet.

Note

Do not attempt to fill out and place the labels until you have completed the system configuration sheet.

The information from the system configuration sheet is used to fill out the labels correctly for all DSSI cables, SF7x storage enclosure OCPs, and magazine tape ISE front panels.

You can also refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out these labels.

Converting a Single-System Configuration to a DSSI VAXcluster Configuration

C.2 Conversion Procedure

Figure C-6 Blank DSSI VAXcluster System Configuration Sheet

KFMSA/DSSI Dual-host Configuration Sheet

KFMSA XMI Node # _____

Bus 1 DSSI ID # _____	Bus 2 DSSI ID # _____
--------------------------	--------------------------

Device Type _____ ALLO_CLASS _____
 DSSI ID # _____ SF200 Box # _____
 Node Name _____ UNITNUM _____
 System ID _____

Device Type _____ ALLO_CLASS _____
 DSSI ID # _____ SF200 Box # _____
 Node Name _____ UNITNUM _____
 System ID _____

Device Type _____ ALLO_CLASS _____
 DSSI ID # _____ SF200 Box # _____
 Node Name _____ UNITNUM _____
 System ID _____

Device Type _____ ALLO_CLASS _____
 DSSI ID # _____ SF200 Box # _____
 Node Name _____ UNITNUM _____
 System ID _____

Device Type _____ ALLO_CLASS _____
 DSSI ID # _____ SF200 Box # _____
 Node Name _____ UNITNUM _____
 System ID _____

Device Type _____ ALLO_CLASS _____
 DSSI ID # _____ SF200 Box # _____
 Node Name _____ UNITNUM _____
 System ID _____

Device Type _____ ALLO_CLASS _____
 DSSI ID # _____ SF200 Box # _____
 Node Name _____ UNITNUM _____
 System ID _____

Device Type _____ ALLO_CLASS _____
 DSSI ID # _____ SF200 Box # _____
 Node Name _____ UNITNUM _____
 System ID _____

Device Type _____ ALLO_CLASS _____
 DSSI ID # _____ SF200 Box # _____
 Node Name _____ UNITNUM _____
 System ID _____

Device Type _____ ALLO_CLASS _____
 DSSI ID # _____ SF200 Box # _____
 Node Name _____ UNITNUM _____
 System ID _____

Bus 1 DSSI ID # _____	Bus 2 DSSI ID # _____
--------------------------	--------------------------

KFMSA XMI Node # _____

Color Code
on Cables _____

Color Code
on Cables _____

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Converting a Single-System Configuration to a DSSI VAXcluster Configuration

C.2 Conversion Procedure

C.2.3.2 Filling Out the Labels

The labels are available in two sizes; the larger one for the DSSI cables, and the smaller one for the inside of the SF7x OCP door, the front panel of a magazine tape ISE, and the host system I/O panel.

Refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out these labels.

For the DSSI VAXcluster configuration, use the following colored labels on the SF7x OCP doors, the front panels of the magazine tape ISEs, and all DSSI cables.

Label Color	DECarray Port/DECarray Position
Blue	Port 1, position 5 and/or 1, port 9
Red	Port 2, position 6 and/or 2, port 10
Yellow	Port 3, position 3, port 11
Green	Port 4, position 4, port 12
Blue with white stripe	Port 5, position 7, port 13
Red with white stripe	Port 6, position 8, port 14

Converting a Single-System Configuration to a DSSI VAXcluster Configuration

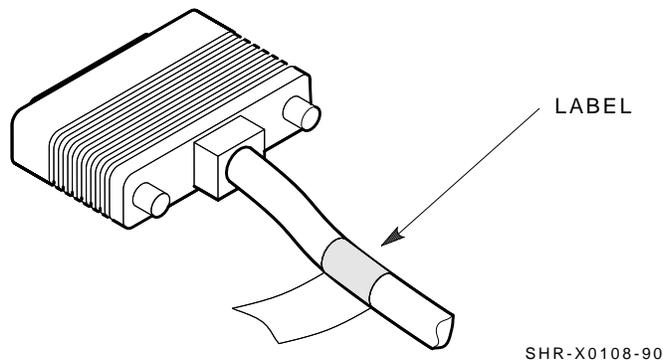
C.2 Conversion Procedure

C.2.3.3 Placing the Labels

Once the labels have been filled out, place them on the DSSI cables and the SF7x OCP doors. Also place a label on the front of the magazine tape ISE.

Place cable labels four inches behind the DSSI connector on both ends of the DSSI cable (Figure C-7).

Figure C-7 Placing a Label on a DSSI Cable

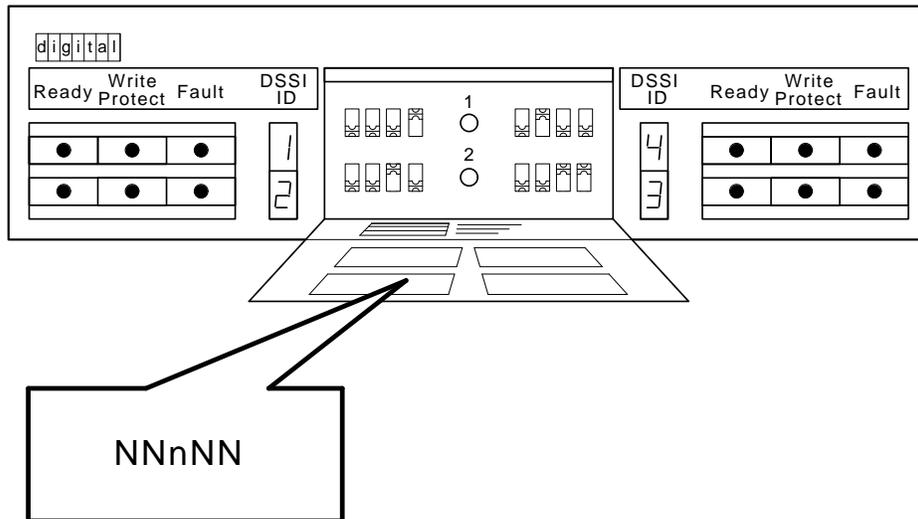


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Converting a Single-System Configuration to a DSSI VAXcluster Configuration C.2 Conversion Procedure

Place the SF7x OCP label as shown in Figure C-8 and the magazine tape ISE label as shown in Figure C-9.

Figure C-8 Placing a Label on the OCP Door

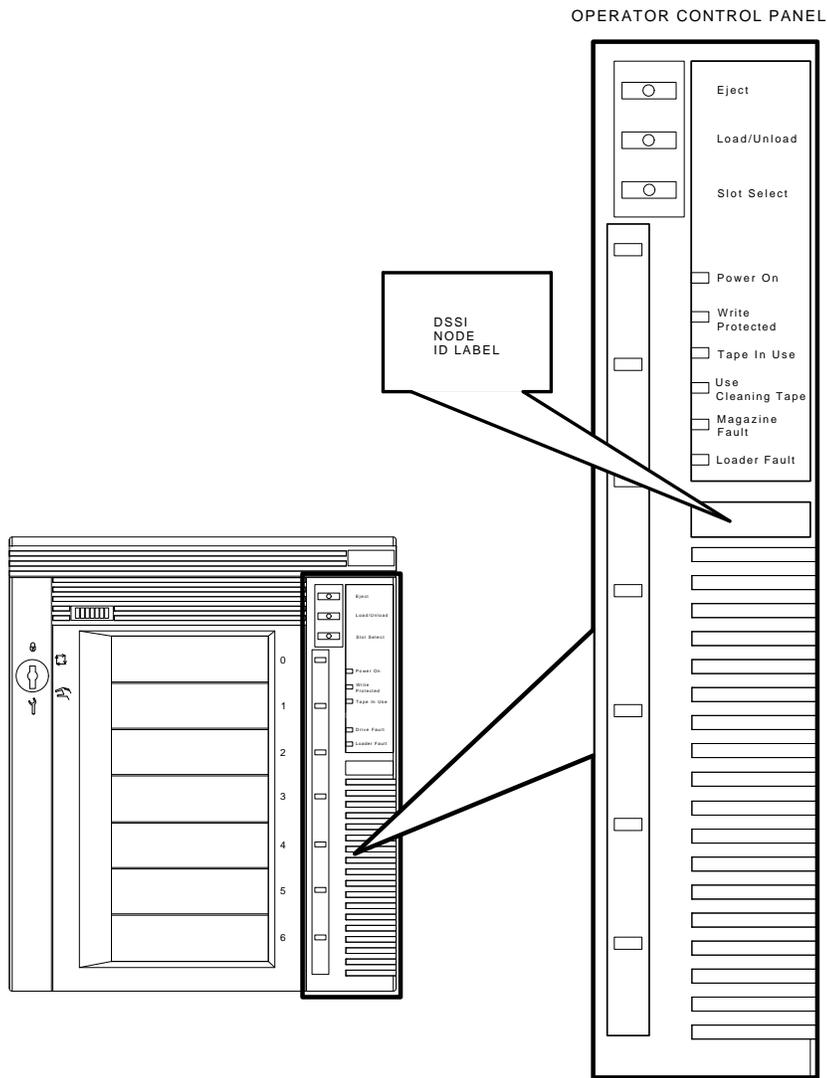


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Converting a Single-System Configuration to a DSSI VAXcluster Configuration

C.2 Conversion Procedure

Figure C-9 Placing a Label on the Magazine Tape ISE



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Converting a Single-System Configuration to a DSSI VAXcluster Configuration C.2 Conversion Procedure

C.2.4 Powering Up the DECarray

Once the DECarray has been converted to the DSSI VAXcluster configuration and is labeled, you are ready to apply power.

CAUTION

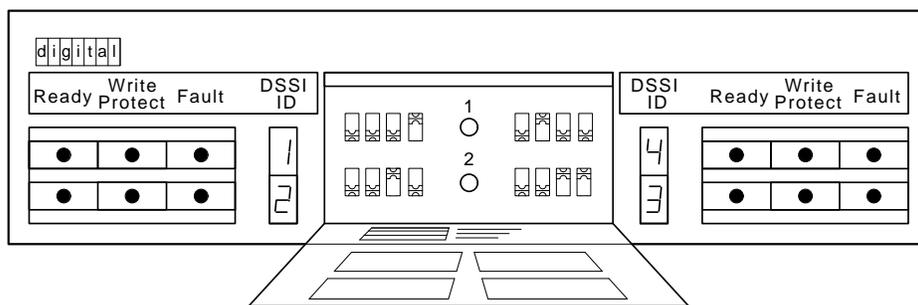
Ensure that the ac power switch on each SF7x storage enclosure and magazine tape ISE installed is in the off position.

1. At the rear of the storage array, turn the power controller on. Ensure that the BUS/OFF/ON switch is in the down position.
2. At the rear of the storage array, turn on each magazine tape ISE installed (if present). Power up position 5, then 6. Observe the front panels for fault indications.
3. At the rear of the storage array, turn on each SF7x storage enclosure starting with position 1 and continuing in numerical order.
4. Press each drive dc power switch for each SF7x storage enclosure. Start with position 1 and continue in numerical order.
5. Observe the OCP indicators (Figure C-10).
 - a. Check that the TERM PWR indicator (behind the door of the OCP) is on for all positions installed.
 - b. Check that the SPLIT indicator (behind the door of the OCP) is *off* for all positions.
 - c. Ensure that all DSSI ID switches on all OCPs are set to left-rear (ID = 1), left-front (ID = 2), right-front (ID = 3), and right-rear (ID = 4).
6. Press the Ready button on the OCP (Figure C-10). The green Ready indicator flickers, then lights steadily once the ISE is on-line.

Converting a Single-System Configuration to a DSSI VAXcluster Configuration

C.2 Conversion Procedure

Figure C-10 OCP Indicators and Controls



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C.2.5 Bringing a DSSI VAXcluster Conversion On-Line

Refer to the *KFMSA Module Installation and User Manual* for the section on configuring a DSSI VAXcluster configuration.

Note that you will be instructed to perform the following tasks:

- Boot VAX/DS on the host systems.
- Attach the KFMSA modules in each system.
- Select each KFMSA module in each system.
- Run EVCXE or EVCXF.
- Modify certain parameters in the disk ISEs.
- Ensure that all modified parameters are recorded as permanent values.
- Verify the communication path with all ISEs on the DSSI buses.

After all of the above have been accomplished successfully, return the systems and the DECarray to normal operating mode.

Converting a Single-System Configuration to a DSSI VAXcluster Configuration C.2 Conversion Procedure

C.2.6 Final Verification

Once the DECarray conversion, cabling and labeling, and the powering up steps are complete, you are ready to configure the DSSI subsystem and verify the correct operation of each ISE in the array with the host system.

Refer to the *KFMSA Module Installation and User Manual*, Magazine Tape ISE Service Manual, and the Integrated Storage Element User Guide for detailed information on the correct operation of each ISE. These manuals contain procedures for establishing the communications between the ISEs, the adapter module, and the system. They also contain step-by-step procedures for reconfiguring the system with its newly installed DSSI devices.

Refer to the manuals for the disk ISE and tape ISE for detailed information on the local programs in the ISEs.

D

Installing a DECarray with a VAX 4000 System

This appendix describes how to install the DECarray correctly and safely with VAX 4000 systems in two configurations:

- Single-system installation (Section D.1) where one CK-SF200-LP cable kit is required per DSSI bus.
- DSSI VAXcluster installation (Section D.2) where two CK-SF200-LP cable kits are required per DSSI bus.

Perform the steps in the appropriate section only after you have completed the installation of the DECarray as described in previous chapters.

Ensure that all precautions for site preparation have been completed.

Digital Services or trained installers must perform the step described in the following warning:

WARNING

Hazardous voltages are in the DECarray and in the components of the DECarray.

When performing any operation involving the power source, turn off the power controls of all components and on the power controller. Disconnect the power cable from the source outlet. Perform the operation, then reconnect the power cable to the source.

Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

D.1 Single-System Installation of a DECarray

As many as four single-system configured VAX 4000 systems can connect with a single DECarray.

The single DECarray requires connection to a DSSI adapter to support the DSSI ISEs. The VAX 4000 Model 300 provides two embedded DSSI adapters on the KA670 CPU module and also supports up to two KFQSA DSSI adapters installed in the system Q-bus backplane. The VAX 4000 Model 200 provides one embedded DSSI adapter on the KA660 CPU module and also supports up to two KFQSA DSSI adapters installed in the system Q-bus backplane.

In a single-system configuration, up to seven ISEs and one adapter can be supported on a single DSSI bus. That DSSI bus can consist of one tape ISE and up to, six disk ISEs or up to seven disk ISEs (where one disk ISE is in the system enclosure). For further information on single-system configurations, refer to the customer hardware information kit.

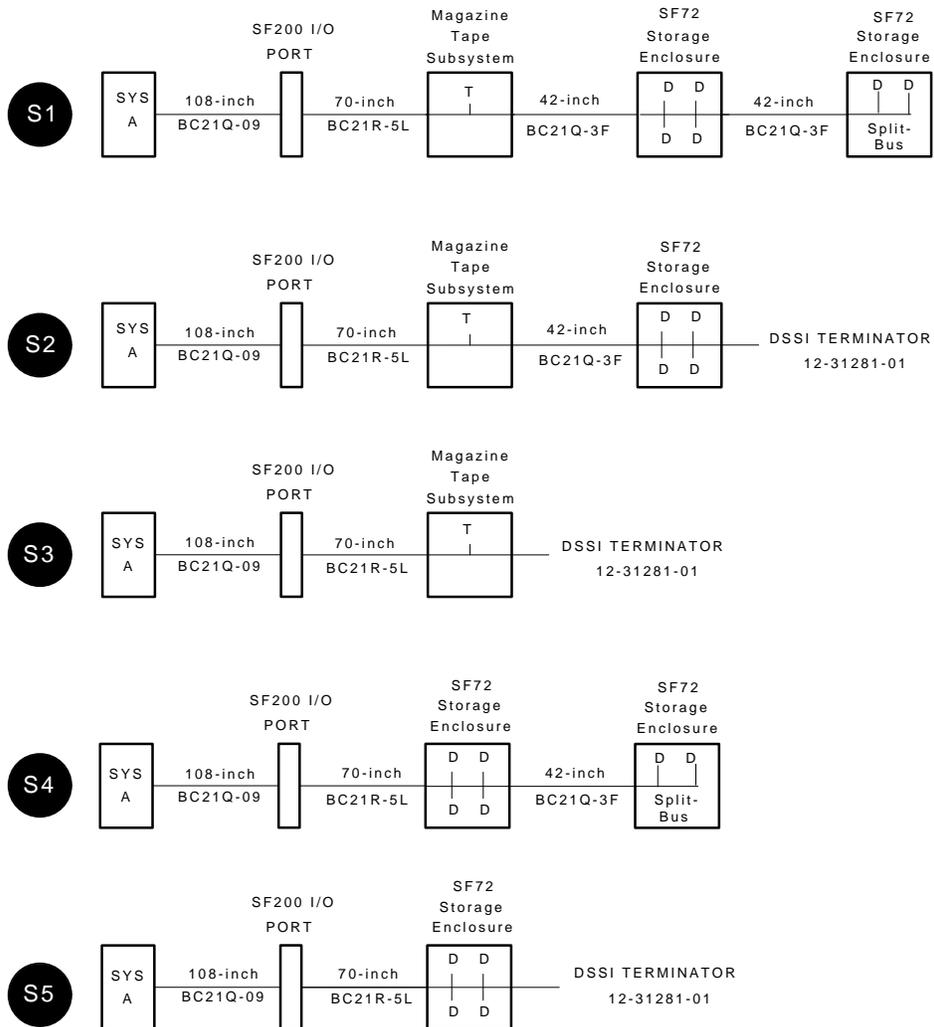
Briefly, a fully configured single-system system could contain one of the following:

- Two TF857 magazine tape ISEs. 24 RF disk ISEs (in SF7x storage enclosures) and no ISEs internal to the system enclosure.
- One TF857 magazine tape ISE. 24 RF disk ISEs (in SF7x storage enclosures) and one ISEs internal to the system enclosure.
- 24 RF disk ISEs (in SF7x storage enclosures) and two ISEs internal to the system enclosure.

Figure D-1 shows all the possible single-system DSSI buses.

Installing a DECarray with a VAX 4000 System D.1 Single-System Installation of a DECarray

Figure D-1 Possible Single-System DSSI Bus Configurations



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Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

Note

A single-system DSSI bus can only be connected from a VAX 4000 system to a single DECarray and then terminate in that DECarray. No additional expanders can be connected to that DSSI bus.

For a VAX 4000 Model 200, DSSI bus 0 connect to ports 1 on the DECarray. The first KFQSA adapter connects to port 2 and the second KFQSA adapter connects to port 3.

For a VAX 4000 Model 300, DSSI bus 0 and 1 connect to ports 1 and 2 on the DECarray. The first KFQSA adapter connects to port 3 and the second KFQSA adapter connects to port 4.

This section describes the procedures for installing the DECarray in a single-system configuration correctly and safely. Digital Services or trained installation personnel must perform the procedures.

Ensure that all precautions for site preparation have been completed.

The following procedures describe how to:

- Inspect the DECarray for proper configuration (Section D.1.1)
- Cable the DECarray with an existing VAX 4000 system in the single-system configuration (Section D.1.2)
- Check the DECarray for correct operation (Section D.1.3)

Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

D.1.1 Inspecting the DECarray (Single-System)

This procedure describes how to inspect the DECarray for correct configuration.

At the front of the DECarray:

- a. The DSSI ID switches behind the door of the operator control panel (OCP) of every SF7x enclosure installed are set according to Table D-1 and Figure D-2.
- b. The MSCP switch (right-most switch of each switch pack) should be in the down or enabled position at all times unless you are instructed to change it to the up or disabled position.

Table D-1 SF7x DSSI ID Verification (Front View)

Positions 1, 2, 4, and 7 ¹	MSCP	Switch Settings	Corresponding DSSI ID Number
Left Rear (LR)	0	001	1
Left Front (LF)	0	010	2
Right Front (RF)	0	011	3
Right Rear (RR)	0	100	4

Positions 3 and 8 ¹	MSCP	Switch Settings	Corresponding DSSI ID Number
Left Rear (LR)	0	101	5
Left Front (LF)	0	110	6
Right Front (RF)	0	110	6
Right Rear (RR)	0	101	5

¹The switch settings for OCPs in these positions are 0 = down and 1 = up.

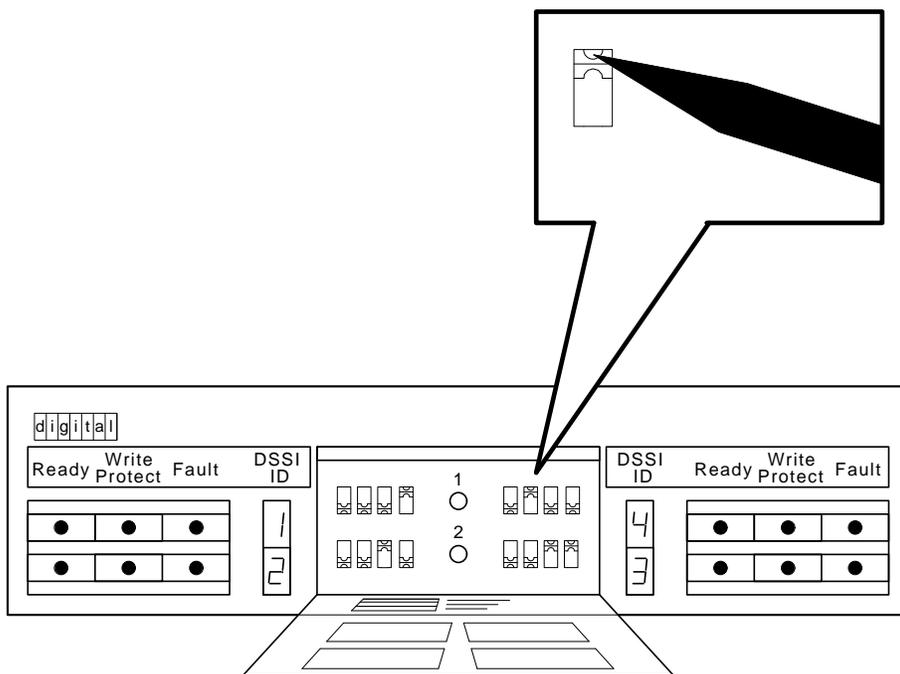
Refer to Figure D-4 for the locations of the position numbers in the DECarray. Note that these numbers are in the upper right hand corner labeled 1 through 8. These numbers are located on the front and rear DECarray cabinet uprights.

Ensure that the DSSI ID numbers of each TF857 magazine tape ISE installed in the DECarray are set to 0 and that the TMSCP switch is enabled (down). Refer to the TF857 magazine tape ISE documentation for the procedure to access the DSSI adapter module.

Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

Figure D-2 Verifying the SF7x DSSI ID Switch Settings



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Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

D.1.2 Cabling the DECarray (Single-System)

Start at the rear of the DECarray cabinet.

1. Plug the main power cable of the DECarray into its power receptacle.

WARNING

Hazardous voltages are in the DECarray and in the components of the DECarray.

When performing any operation involving the power source, turn off the power controls of all components and on the power controller. Disconnect the power cable from the source outlet. Perform the operation, then reconnect the power cable to the source.

2. Connect the 108-inch DSSI cable or cables (PN BC22Q-09) from the DECarray DSSI I/O panel to the appropriate system DSSI connector.
 - a. At the system DSSI connector, remove the terminator or terminators (PN 12-29258-01). See Figure D-3. Store these terminators in the ESD pouch on the rear door of the DECarray cabinet.
 - b. The system DSSI connectors are (Figure D-3):
 - DSSI Bus 0 (embedded adapter, also connects to internal TF and RF ISEs)
 - DSSI Bus 1, Model 300 only (embedded adapter, TF and RF ISEs)
 - KFQSA 1 (first installed adapter in the Q-bus backplane, RF ISEs only)
 - KFQSA 2 (second installed adapter in the Q-bus backplane, RF ISEs only)

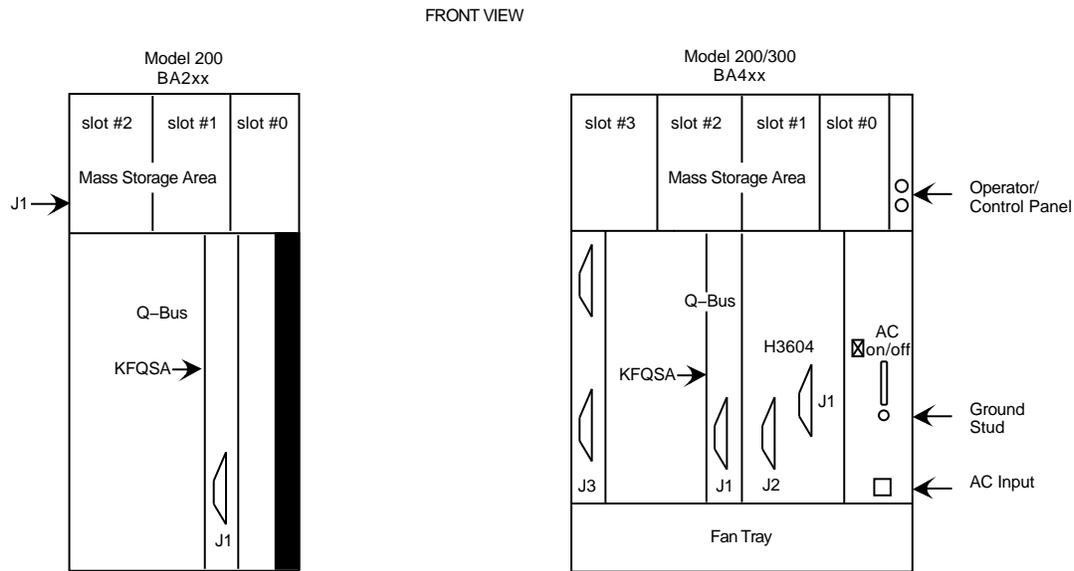
Note

Only ports 1 through 4 are used on the DECarray in a single-system configuration.

Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

Figure D-3 VAX 4000 DSSI Connectors



Connector	Description
J1	DSSI Bus 0 port (internal/external ISEs)
KFQSA - J1	DSSI IN/OUT port (external RF disk ISEs)

Connector	Description
J1, J2	DSSI Bus 1 ports (external ISEs only)
J3	DSSI Bus 0 port (internal/external ISEs)
KFQSA - J1	DSSI IN/OUT port (external RF disk ISEs)

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Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

- c. Install the terminator or terminators (PN 12-31281-01) to their correct position on the SF7x enclosures, TF857 magazine tape ISEs, and system I/O panel (Appendix A).

Note that the positions are numbered on the cabinet frame side rails on the front and the rear of the cabinet.

- If the array has an SF7x storage enclosure in position 1 ONLY then install a terminator (PN 12-31281-01) in the left DSSI connector of the enclosure.
 - If the array has an SF7x storage enclosure in position 1 and a TF857 magazine tape ISE in positions 5 and 6, then install a terminator (PN 12-31281-01) in the bottom DSSI connector of the TF857 magazine tape ISE in position 6.
 - If the array has two TF857 magazine tape ISEs in positions 5 and 6, then install a terminator (PN 12-31281-01) in the bottom DSSI connector of both TF857 magazine tape ISEs.
 - If the array has an SF7x storage enclosure in position 1 only, then install a terminator (PN 12-31281-01) in the leftmost DSSI connector of position 1.
 - If the array has an SF7x storage enclosure in position 1 and 2, then install a terminator (PN 12-31281-01) in the leftmost DSSI connectors of position 1 and 2.
 - If the array has an SF7x storage enclosure in position 1, 2, 3, 4, and 7, then install a terminator (PN 12-31281-01) in the leftmost DSSI connectors of positions 4 and 7.
 - If the array has an SF7x storage enclosure in position 1, 2, 3, 4, 7, and 8, then install a terminator (PN 12-31281-01) in the leftmost DSSI connectors of position 4 and 7.
3. Connect the ground strap (provided with the cable kit). Attach one end of the strap according to the instructions found in the *System Expansion Installation Supplement*. Connect the other end to one of the screws securing the power controller to the storage array.
 4. All other configurations, with or without TF857 magazine tape ISEs, do not need terminators.

Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

D.1.2.1 Example of a Fully Configured Single-System DECarray

The following section shows a fully configured single-system consisting of a DECarray with 24 disk ISEs and two TF857 magazine tape ISEs connected to a VAX 4000 systems.

Refer to Appendix A for the other possible configurations for the DECarray.

Remember, DSSI Bus 0 from the VAX 4000 Model 300 can have tape and disk ISEs on it that are internally mounted in the system enclosure. Also DSSI Bus 0 and 1 (the embedded DSSI buses) are the ONLY two DSSI buses from the system that can support the DSSI tape ISEs (TF857).

Figure D-4 shows the fully configured DECarray. Figure D-5 shows each of the 4 buses in Figure D-4.

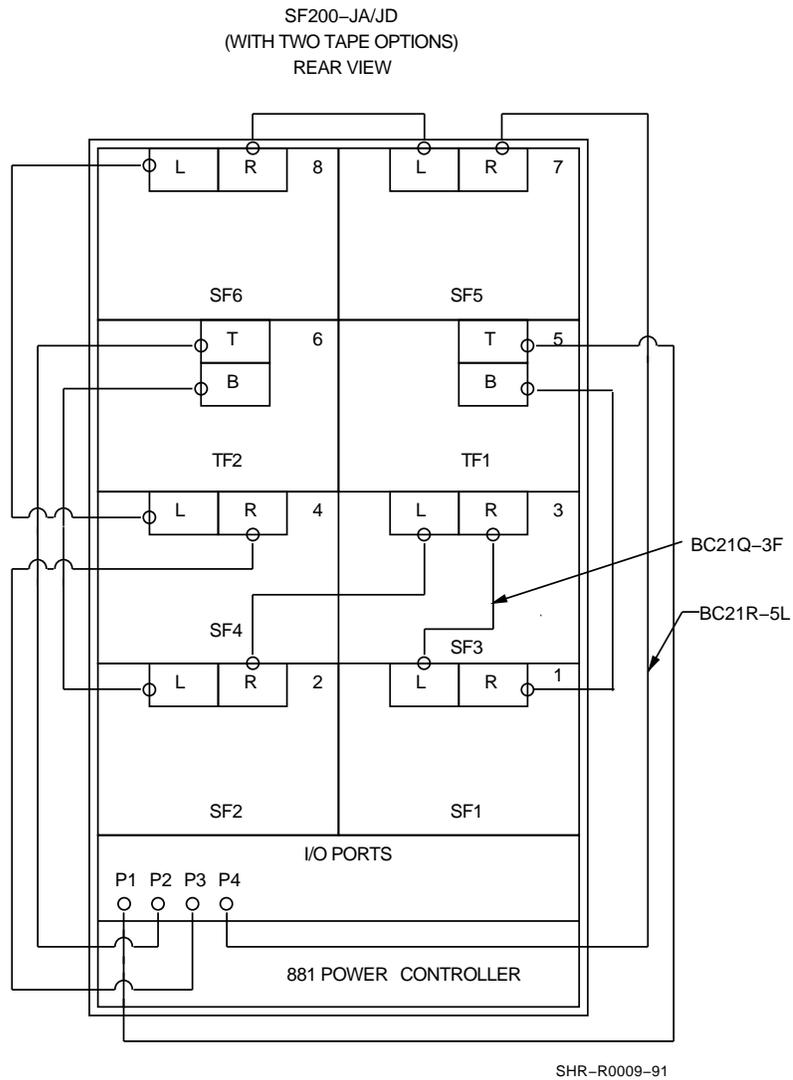
Use Table D-2 for configuring DSSI bus 0.

Table D-2 DSSI Bus 0 Configurations

System Internal ISEs		DECarray	
Tape ISE	Disk ISE	Tape ISE	Disk ISE
0	0	0 or 1	up to 6
0	1	0 or 1	up to 6
0	2	0 or 1	up to 4
0	3	0 or 1	up to 4
0	4	0 or 1	up to 2
1	0	0	up to 6
1	1	0	up to 4
1	2	0	up to 4
1	3	0	up to 2

Installing a DECarray with a VAX 4000 System D.1 Single-System Installation of a DECarray

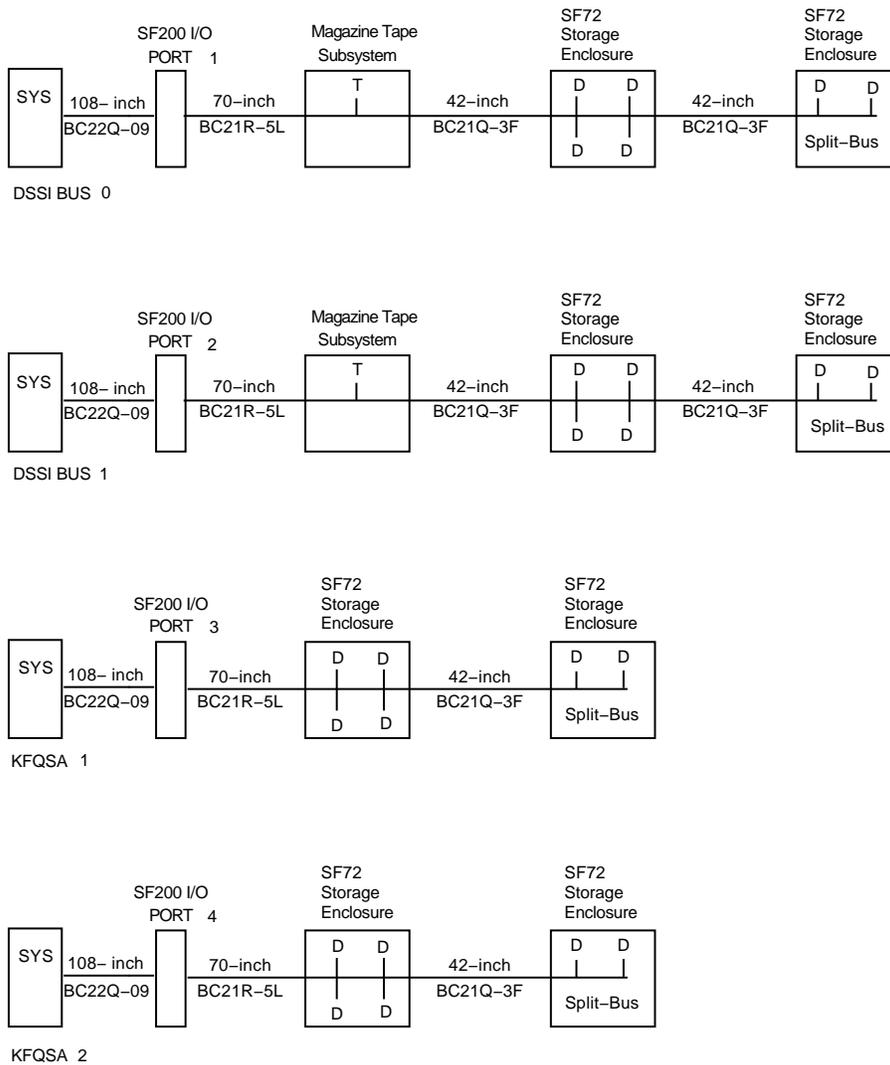
Figure D-4 Fully Configured Single-System DECarray



Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

Figure D-5 Single-System Bus Configurations



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Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

D.1.2.2 Completing the System Configuration Sheet (Single-System)

Fill out the system configuration sheet (Figure D-6). The information from the system configuration sheet is used to fill out the labels correctly for all DSSI cables, enclosure OCPs, and ISEs.

Note

Do not attempt to fill out and place the labels until you have completed the system configuration sheet.

Refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out the labels.

Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

Figure D-6 Single-System Configuration Sheet
 DSSI Single-System Configuration Sheet
 [for MicroVAX II, MicroVAX/VAXserver 3xxx (Q-bus), and VAX 4000 systems]

DSSI ADAPTER	
Bus _____	DSSI ID # _____

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	SF200 Box # _____
Node Name _____	UNITNUM _____
System ID _____	

Color Code _____

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Installing a DECarray with a VAX 4000 System

D.1 Single-System Installation of a DECarray

D.1.3 Single-System Final Verification

Once the hardware installation, cabling and labeling, and the powering up steps are complete, you are ready to configure the DSSI subsystem and verify the correct operation of each ISE in the array with the system.

Refer to the system installation manuals and *TF857 Magazine Tape ISE Service Manual* for detailed information on the correct operation of each ISE. These manuals contain procedures for establishing the communications between the ISEs, the adapter module, and the system. They also contain step-by-step procedures for reconfiguring the system with its newly installed DSSI devices.

Refer to the manuals for the disk ISE and tape ISE for detailed information on the local programs in the ISEs.

Remember, each SF7x storage enclosure can contain two or four disk ISEs. Each TF857 magazine tape ISE contains one tape ISE. A fully configured DECarray contains 24 disk ISEs and 2 tape ISEs.

If at any time you detect a failure, refer to Chapter 9.

Once the verification is complete, close the cabinet doors; turn the hex-Allen fasteners one quarter turn clockwise to lock. The system is ready to be turned over to the system manager.

Installing a DECarray with a VAX 4000 System

D.2 DSSI VAXcluster Installation of a DECarray

D.2 DSSI VAXcluster Installation of a DECarray

As many as two pairs of DSSI VAXcluster configured VAX 4000 systems can be used with a single DECarray.

A single DECarray requires connection to two DSSI adapters to support each DSSI bus. The VAX 4000 Model 300 provides two embedded DSSI adapters on the KA670 CPU module and also supports up to two KFQSA DSSI adapters installed in the system Q-bus backplane. The VAX 4000 Model 200 provides one embedded DSSI adapter on the KA660 CPU module and also supports up to two KFQSA DSSI adapters installed in the system Q-bus backplane.

In a DSSI VAXcluster configuration, up to six ISEs and two adapters can be supported on a single DSSI bus. That configuration can consist of one tape ISE and up to five disk ISEs or six disk ISEs (where one disk ISE is in the system enclosure). For further information on DSSI VAXcluster configurations, refer to the customer hardware information kit.

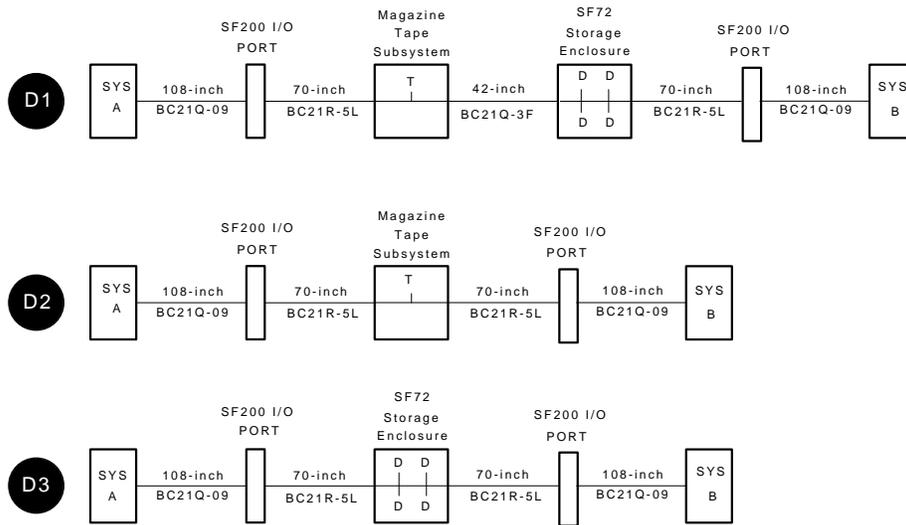
A fully configured DSSI VAXcluster system could contain one of the following:

- Two TF857 magazine tape ISEs. 16 RF disk ISEs (in SF7x storage enclosures) and two ISEs internal to the systems enclosure.
- One TF857 magazine tape ISE. 16 RF disk ISEs (in SF7x storage enclosures) and three ISEs internal to the systems enclosure.
- 16 RF disk ISEs (in SF7x storage enclosures) and four ISEs internal to the systems enclosure.

Figure D-7 shows the possible DSSI VAXcluster buses.

Installing a DECarray with a VAX 4000 System D.2 DSSI VAXcluster Installation of a DECarray

Figure D-7 Possible DSSI VAXcluster DSSI Bus Configurations



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Installing a DECarray with a VAX 4000 System

D.2 DSSI VAXcluster Installation of a DECarray

Note

A DSSI VAXcluster bus can only be connected from a VAX 4000 to a single DECarray and then to another VAX 4000.

For a VAX 4000 Model 200, DSSI bus 0 connects to ports 1 and 9 on the DECarray. The first KFQSA adapter connects to port 2 and 10. The second KFQSA adapter connects to port 3 and 11.

For a VAX 4000 Model 300, DSSI bus 0 and 1 connect to ports 1, 2 and 9, 10 on the DECarray. The first KFQSA adapter connects to port 3 and 11. The second KFQSA adapter connects to port 4 and 12.

This section provides the procedures for installing the DECarray in a DSSI VAXcluster configuration correctly and safely. Digital Customer Services or trained installing personnel must perform the procedures.

Ensure that all precautions for site preparation have been completed. Refer to DECarray installation guide.

The following procedures describes how to:

- Inspect the array for proper configuration (Section D.2.1)
- Cable the DECarray with an existing VAX 4000 Model 300 system in the DSSI VAXcluster configuration (Section D.2.2)
- Check the DECarray for correct operation (Section D.2.3)

Installing a DECarray with a VAX 4000 System

D.2 DSSI VAXcluster Installation of a DECarray

D.2.1 Inspecting the DECarray (DSSI VAXcluster)

This procedure describes how to inspect the DECarray for correct configuration.

Inspect the DECarray from the front, then from the rear.

At the front of the DECarray:

- a. The DSSI ID switches behind the door of the operator control panel (OCP) of every SF7x enclosure installed are set according to Table D-3 and Figure D-8.
- b. The MSCP switch (right-most switch of each switch pack) should be in the down or enabled position at all times unless you are instructed to change it to the up or disabled position.

Table D-3 SF7x DSSI ID Verification (Front View)

ALL Positions ¹	MSCP	Switch Settings	Corresponding DSSI ID Number
Left Rear (LR)	0	001	1
Left Front (LF)	0	010	2
Right Front (RF)	0	011	3
Right Rear (RR)	0	100	4

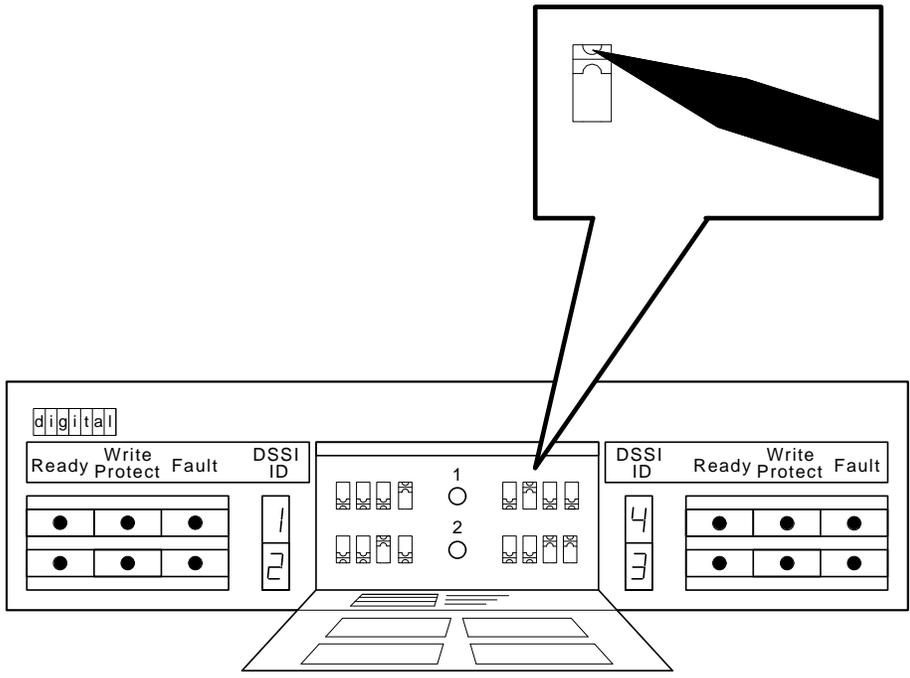
¹The switch settings for OCPs in these positions are 0 = down and 1 = up.

Figure D-10 shows the locations of the position numbers in the DECarray. These numbers are in the upper right hand corner labeled 1 through 8. These numbers are located on the front and rear DECarray cabinet uprights.

Ensure that the DSSI ID numbers of each TF857 magazine tape ISE installed in the DECarray are set to 0 and that the TMSCP switch is enabled (down). Refer to the TF857 magazine tape ISE documentation for the procedure to access the DSSI adapter module.

Installing a DECarray with a VAX 4000 System
D.2 DSSI VAXcluster Installation of a DECarray

Figure D-8 Verifying the SF7x DSSI ID Switch Settings



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Installing a DECarray with a VAX 4000 System

D.2 DSSI VAXcluster Installation of a DECarray

D.2.2 Cabling the DECarray (DSSI VAXcluster)

Start at the rear of the DECarray cabinet.

1. Plug the main power cable of the DECarray into its power receptacle.

WARNING

Hazardous voltages are in the DECarray and in the components of the DECarray.

When performing any operation involving the power source, turn off the power controls of all components and on the power controller. Disconnect the power cable from the source outlet. Perform the operation, then reconnect the power cable to the source.

2. Connect the 108-inch DSSI cable or cables (PN BC22Q-09) from the DECarray DSSI I/O panel to the appropriate system DSSI connector.
 - a. At the system DSSI connector, remove the terminator or terminators (part number 12-29258-01). See Figure D-9. Store these terminators in the ESD pouch on the rear door of the DECarray cabinet.
 - b. The following is a list of system DSSI connectors (Figure D-9):
 - DSSI Bus 0 (embedded adapter, also connects to internal TF and RF ISEs)
 - DSSI Bus 1, Model 300 only (embedded adapter, TF and RF ISEs)
 - KFQSA 1 (first installed adapter in the Q-bus backplane, RF ISEs only)
 - KFQSA 2 (second installed adapter in the Q-bus backplane, RF ISEs only)

Connect DSSI bus 0 of either DSSI VAXcluster system through the DECarray and then to DSSI bus 1 on the other DSSI VAXcluster system. This allows for the maximum number of embedded ISEs in a DSSI VAXcluster configuration.

Installing a DECarray with a VAX 4000 System

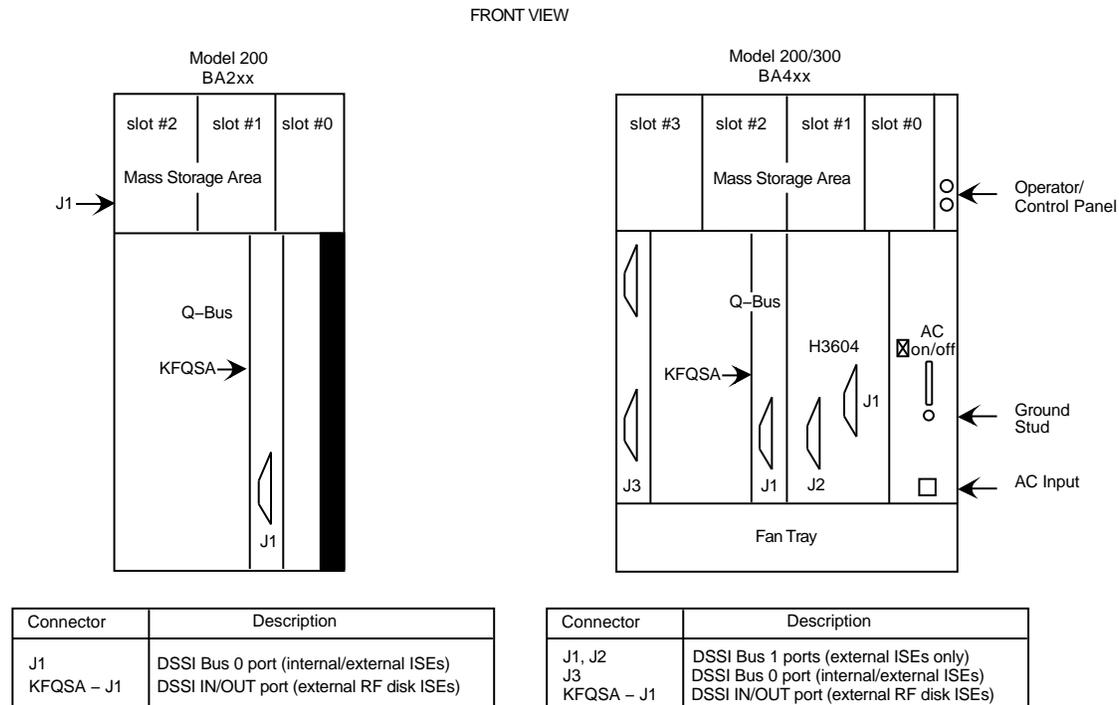
D.2 DSSI VAXcluster Installation of a DECarray

3. Connect the ground strap (provided with the cable kit). Attach one end of the strap according to the instructions found in the *System Expansion Installation Supplement*. Connect the other end to one of the screws securing the power controller to the DECarray.

Note

Note that DECarray I/O panel DSSI ports 5, 6, 7, 8, 13, 14, 15, and 16 are not used.

Figure D-9 VAX 4000 DSSI Connectors



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Installing a DECarray with a VAX 4000 System

D.2 DSSI VAXcluster Installation of a DECarray

D.2.2.1 Example of a Fully Configured DSSI VAXcluster System

The following section shows a fully configured DSSI VAXcluster system consisting of a DECarray with 16 disk ISEs and two TF857 magazine tape ISEs connected to two VAX 4000 (each with one RF disk ISE).

DSSI Bus 0 from the VAX 4000 Model 300 can have tape and disk ISEs on it that are internally mounted in the system enclosure. Also DSSI Bus 0 and 1 (the embedded DSSI buses) are the *Only* two DSSI buses from the system that can support the DSSI tape ISEs.

Figure D-10 shows the fully configured DECarray. Figure D-11 shows each of the 4 buses in Figure D-10.

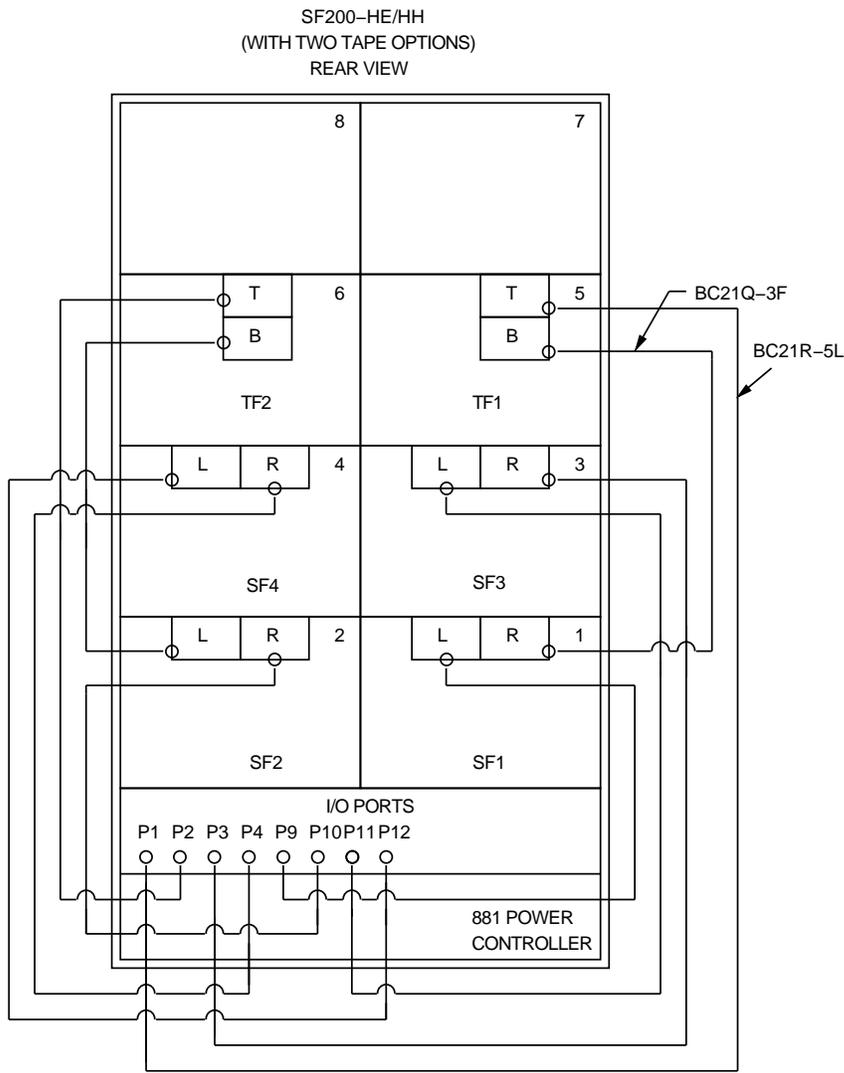
Use Table D-4 for configuring DSSI bus 0 on either system to DSSI bus 1 of the other DSSI VAXcluster system.

Table D-4 DSSI Bus 0 to DSSI Bus 1 Configurations

System Internal ISEs			
Tape ISE	DSSI Bus 0		DSSI Bus 1
	Disk ISE	Tape ISE	Disk ISE
0	0	0 or 1	up to 4
0	1	0 or 1	up to 4
0	2	0	up to 4
0	3	0 or 1	up to 2
0	4	0 or 1	none
1	0	0	up to 4
1	1	0	up to 4
1	2	0	up to 2
1	3	0	up to 2

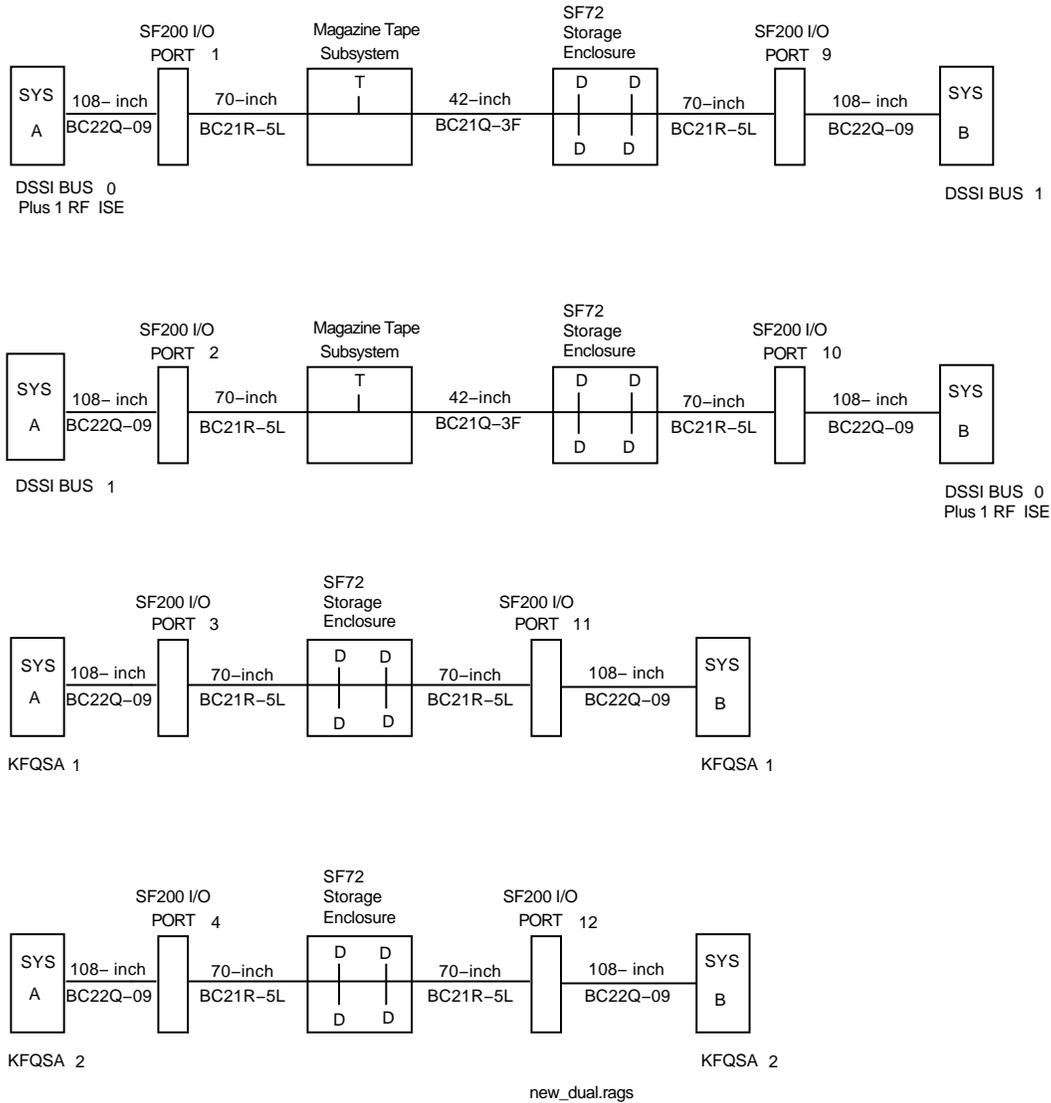
Installing a DECarray with a VAX 4000 System
D.2 DSSI VAXcluster Installation of a DECarray

Figure D-10 Fully Configured DSSI VAXcluster DECarray



Installing a DECarray with a VAX 4000 System D.2 DSSI VAXcluster Installation of a DECarray

Figure D-11 DSSI VAXcluster Bus Configurations



Installing a DECarray with a VAX 4000 System

D.2 DSSI VAXcluster Installation of a DECarray

D.2.2.2 Completing the System Configuration Sheet (DSSI VAXcluster)

Fill out the system configuration sheet (Figure D-12). The information from the system configuration sheet is used to fill out the labels correctly for all DSSI cables, enclosure OCPs, and ISEs.

Note

Do not attempt to fill out and place the labels until you have completed the system configuration sheet.

Refer to the inside cover of the *SF Family Label Booklet* for instructions on filling out these labels.

Installing a DECarray with a VAX 4000 System

D.2 DSSI VAXcluster Installation of a DECarray

Figure D-12 DSSI VAXcluster Configuration Sheet

DSSI VAXcluster Configuration Sheet
 [for MicroVAX II, MicroVAX/VAXserver 3xxx (Q-bus), and VAX 4000 systems]

DSSI ADAPTER <table border="1" style="margin: auto; width: 80%;"> <tr> <td style="padding: 2px;">Bus _____</td> </tr> <tr> <td style="padding: 2px;">DSSI ID # _____</td> </tr> </table>	Bus _____	DSSI ID # _____						
Bus _____								
DSSI ID # _____								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Device Type _____</td> <td style="padding: 2px;">ALLO_CLASS _____</td> </tr> <tr> <td style="padding: 2px;">DSSI ID # _____</td> <td style="padding: 2px;">Array Pos. # _____</td> </tr> <tr> <td style="padding: 2px;">Node Name _____</td> <td style="padding: 2px;">UNITNUM _____</td> </tr> <tr> <td colspan="2" style="padding: 2px;">System ID _____</td> </tr> </table>	Device Type _____	ALLO_CLASS _____	DSSI ID # _____	Array Pos. # _____	Node Name _____	UNITNUM _____	System ID _____	
Device Type _____	ALLO_CLASS _____							
DSSI ID # _____	Array Pos. # _____							
Node Name _____	UNITNUM _____							
System ID _____								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Device Type _____</td> <td style="padding: 2px;">ALLO_CLASS _____</td> </tr> <tr> <td style="padding: 2px;">DSSI ID # _____</td> <td style="padding: 2px;">Array Pos. # _____</td> </tr> <tr> <td style="padding: 2px;">Node Name _____</td> <td style="padding: 2px;">UNITNUM _____</td> </tr> <tr> <td colspan="2" style="padding: 2px;">System ID _____</td> </tr> </table>	Device Type _____	ALLO_CLASS _____	DSSI ID # _____	Array Pos. # _____	Node Name _____	UNITNUM _____	System ID _____	
Device Type _____	ALLO_CLASS _____							
DSSI ID # _____	Array Pos. # _____							
Node Name _____	UNITNUM _____							
System ID _____								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Device Type _____</td> <td style="padding: 2px;">ALLO_CLASS _____</td> </tr> <tr> <td style="padding: 2px;">DSSI ID # _____</td> <td style="padding: 2px;">Array Pos. # _____</td> </tr> <tr> <td style="padding: 2px;">Node Name _____</td> <td style="padding: 2px;">UNITNUM _____</td> </tr> <tr> <td colspan="2" style="padding: 2px;">System ID _____</td> </tr> </table>	Device Type _____	ALLO_CLASS _____	DSSI ID # _____	Array Pos. # _____	Node Name _____	UNITNUM _____	System ID _____	
Device Type _____	ALLO_CLASS _____							
DSSI ID # _____	Array Pos. # _____							
Node Name _____	UNITNUM _____							
System ID _____								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Device Type _____</td> <td style="padding: 2px;">ALLO_CLASS _____</td> </tr> <tr> <td style="padding: 2px;">DSSI ID # _____</td> <td style="padding: 2px;">Array Pos. # _____</td> </tr> <tr> <td style="padding: 2px;">Node Name _____</td> <td style="padding: 2px;">UNITNUM _____</td> </tr> <tr> <td colspan="2" style="padding: 2px;">System ID _____</td> </tr> </table>	Device Type _____	ALLO_CLASS _____	DSSI ID # _____	Array Pos. # _____	Node Name _____	UNITNUM _____	System ID _____	
Device Type _____	ALLO_CLASS _____							
DSSI ID # _____	Array Pos. # _____							
Node Name _____	UNITNUM _____							
System ID _____								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Device Type _____</td> <td style="padding: 2px;">ALLO_CLASS _____</td> </tr> <tr> <td style="padding: 2px;">DSSI ID # _____</td> <td style="padding: 2px;">Array Pos. # _____</td> </tr> <tr> <td style="padding: 2px;">Node Name _____</td> <td style="padding: 2px;">UNITNUM _____</td> </tr> <tr> <td colspan="2" style="padding: 2px;">System ID _____</td> </tr> </table>	Device Type _____	ALLO_CLASS _____	DSSI ID # _____	Array Pos. # _____	Node Name _____	UNITNUM _____	System ID _____	
Device Type _____	ALLO_CLASS _____							
DSSI ID # _____	Array Pos. # _____							
Node Name _____	UNITNUM _____							
System ID _____								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;"> DSSI ADAPTER <table border="1" style="margin: auto; width: 80%;"> <tr> <td style="padding: 2px;">Bus _____</td> </tr> <tr> <td style="padding: 2px;">DSSI ID # _____</td> </tr> </table> </td> </tr> </table>	DSSI ADAPTER <table border="1" style="margin: auto; width: 80%;"> <tr> <td style="padding: 2px;">Bus _____</td> </tr> <tr> <td style="padding: 2px;">DSSI ID # _____</td> </tr> </table>	Bus _____	DSSI ID # _____					
DSSI ADAPTER <table border="1" style="margin: auto; width: 80%;"> <tr> <td style="padding: 2px;">Bus _____</td> </tr> <tr> <td style="padding: 2px;">DSSI ID # _____</td> </tr> </table>	Bus _____	DSSI ID # _____						
Bus _____								
DSSI ID # _____								

Color Code _____

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Installing a DECarray with a VAX 4000 System

D.2 DSSI VAXcluster Installation of a DECarray

D.2.3 DSSI VAXcluster Final Verification

Once the hardware installation, cabling and labeling, and the powering up steps are complete, you are ready to configure the DSSI subsystem and verify the correct operation of each ISE in the DECarray with the system.

Refer to the system installation manuals and *TF857 Magazine Tape ISE Service Manual* for detailed information on the correct operation of each ISE. These manuals contain procedures for establishing the communications between the ISEs, the adapter module, and the system. They also contain step-by-step procedures for reconfiguring the system with its newly installed DSSI devices.

Refer to the manuals for the disk ISE and tape ISE for detailed information on the local programs in the ISEs.

Once the verification is complete, close the cabinet doors; turn the hex-Allen fasteners one quarter turn clockwise to lock. The system is ready to be turned over to the system manager.

E

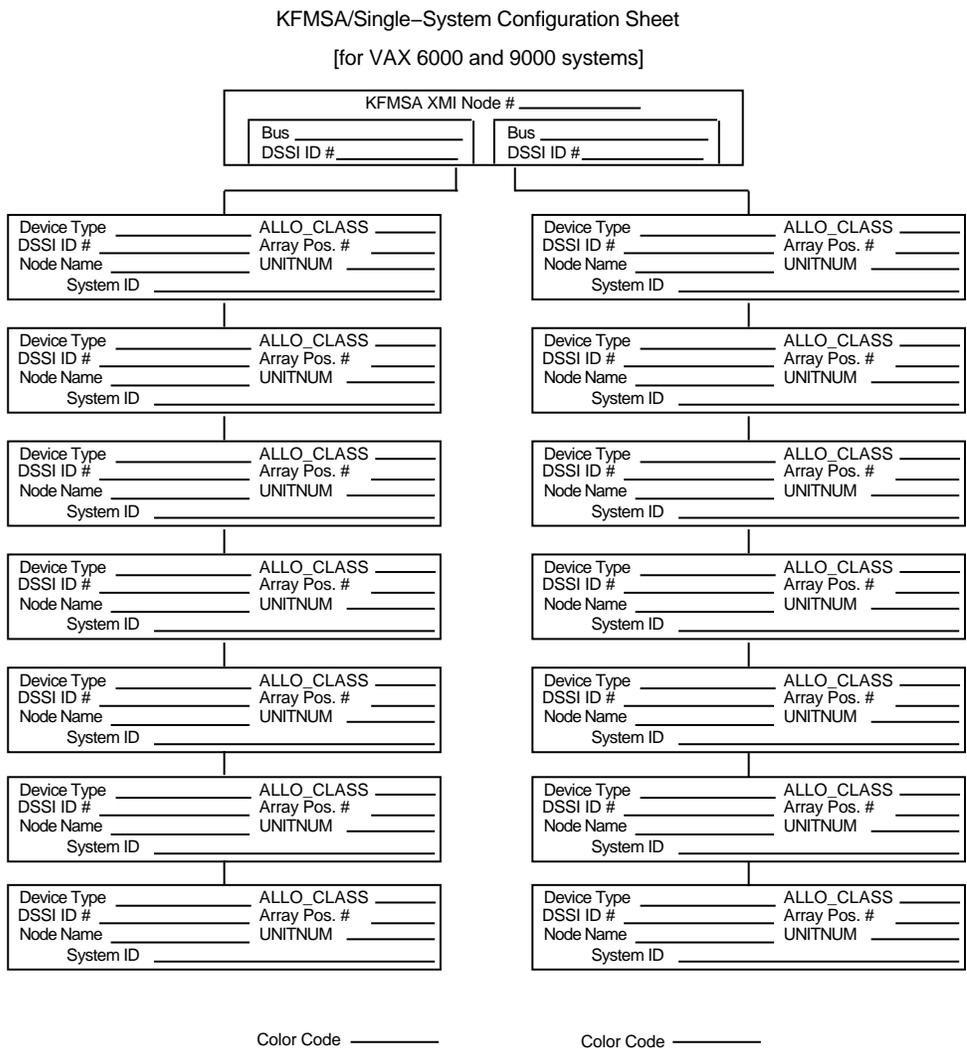
DECarray Configuration Sheets

This appendix contains blank configuration sheets.

Figure E-1, E-2, and E-3 are to be used with systems containing variants of the KFMSA adapter module. Figure E-4 and E-5 are to be used with systems containing either KFQSA adapter modules or embedded DSSI adapter(s).

DECarray Configuration Sheets

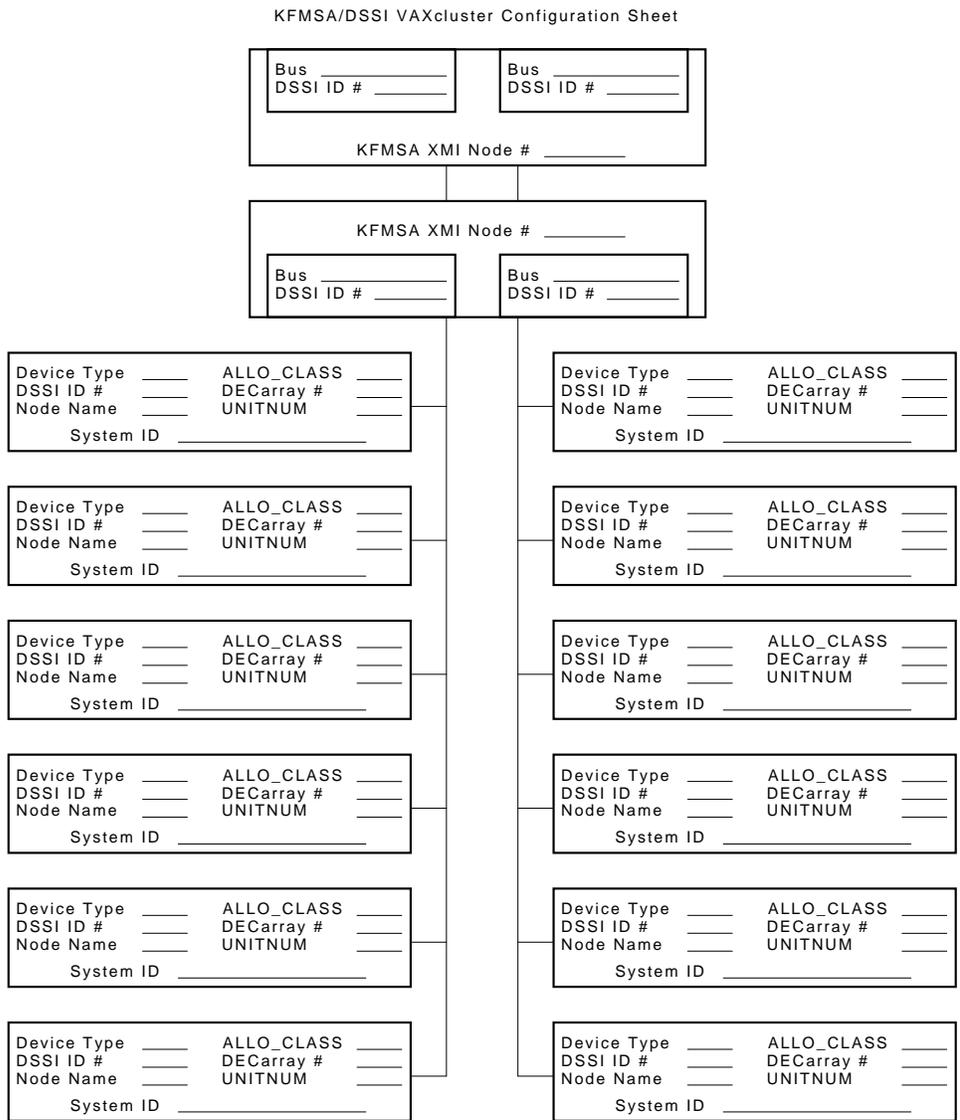
Figure E-1 Single-System Configuration Sheet (Dual Port)



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DECarray Configuration Sheets

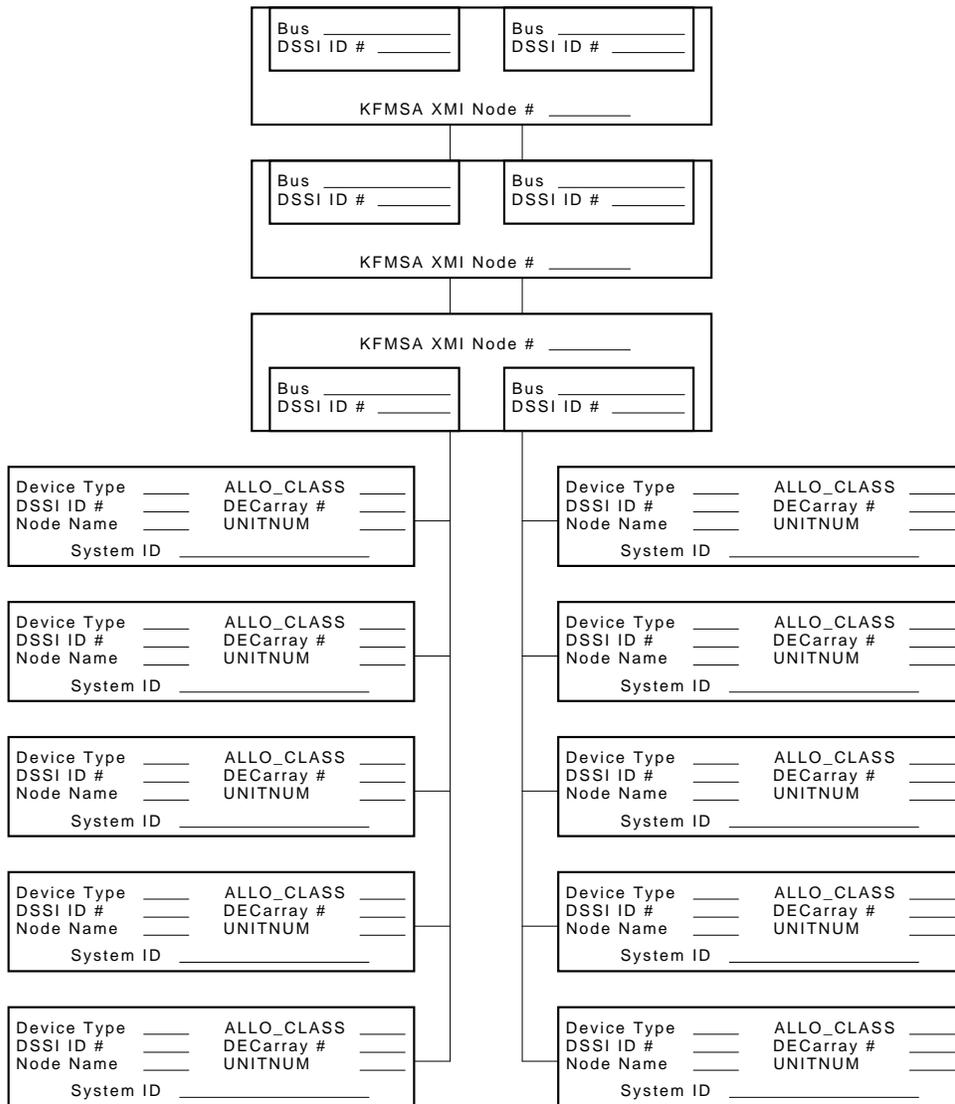
Figure E-2 Two-Host DSSI VAXcluster Configuration Sheet (Dual Port)



MA-0427-92.DG

DECarray Configuration Sheets

Figure E-3 Three-Host DSSI VAXcluster Configuration Sheet (Dual Port)



MA-0428-92.DG

DECarray Configuration Sheets

Figure E-4 Single-System Configuration Sheet (Single Port)

DSSI Single-System Configuration Sheet
 [for MicroVAX II, MicroVAX/VAXserver 3xxx (Q-bus), and VAX 4000 systems]

DSSI ADAPTER	
Bus _____	DSSI ID # _____

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	SF200 Box # _____
Node Name _____	UNITNUM _____
System ID _____	

Color Code _____

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DECarray Configuration Sheets

Figure E-5 DSSI VAXcluster Configuration Sheet (Single Port)

DSSI VAXcluster Configuration Sheet
 [for MicroVAX II, MicroVAX/VAXserver 3xxx (Q-bus), and VAX 4000 systems]

DSSI ADAPTER	
Bus _____	DSSI ID # _____

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
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System ID _____	

Device Type _____	ALLO_CLASS _____
DSSI ID # _____	Array Pos. # _____
Node Name _____	UNITNUM _____
System ID _____	

DSSI ADAPTER	
Bus _____	DSSI ID # _____

Color Code _____

config_double, rags

Glossary

adapter

A module that connects one or more device controllers to the system bus and hides many of the system bus requirements from the controller. The KFQSA module is an Q-bus to DSSI bus adapter. The KFMSA module is an XMI to DSSI bus adapter.

allocation class

A numerical value assigned to the ISE to indicate which system(s) on a cluster it will be served by.

block

The smallest data unit addressable on a disk. Also called a sector. In DSSI ISEs, a block contains 512 bytes of customer data, EDC, ECC, flags, and the block's address header.

DECarray

A storage array that houses up to six storage enclosures and up to two magazine tape ISEs (such as the TF857).

device name

A unique name given to each device by the VMS operating system. The device name generally includes either the allocation class and MSCP unit number assigned to the device (if the allocation class is not zero), or the node name and MSCP unit number (if the allocation class is zero).

DRVTST

A local program resident on the ISE. It is a comprehensive hardware test used to verify ISE operation.

DSSI

Digital Storage System Interconnect. A DSA-based storage interconnect used by the KFMSA adapter and the RF- and TF-series integrated storage elements to transfer data and to communicate with each other.

DSSI VAXcluster

Storage configuration where DSSI ISEs are shared between two DSSI adapters and systems.

DUP

Diagnostic and utility protocol. A SYSAP-level protocol by which a computer directs a storage device controller to run internal diagnostics or utility functions. DUP is implemented as a class driver on the system side, and a corresponding class server on the storage controller side.

EEPROM

Electrically erasable programmable read only memory. Used by the KFMSA adapter to store configuration, manufacturing, and error information in a nonvolatile location.

embedded adapter

A adapter that connects one or more device controllers to the system (such as a VAX 4000) bus and hides many of the system bus requirements from the controller. Refer to the system documentation for further information.

ISE

Integrated storage element. All DSSI storage devices are ISEs.

KFMSA

XMI bus to DSSI bus adapter.

KFQSA

Q-bus to DSSI bus adapter.

magazine tape ISE

A DSSI tape ISE with tape loader, such as a TF857.

MSCP

Mass Storage Control Protocol. An application layer protocol used by the system to perform disk I/O operations and I/O control functions.

node name

A 6-character (maximum) value that is assigned to each DSSI ISE. The node name of each ISE must be unique across the system topology.

OCP

Operator control panel. An enclosure interface that allows remote control of DSSI node ID selection and ISE operating status.

PARAMS

A local program resident on the ISE. PARAMS is used to view and modify current device parameter settings on an ISE.

Q-BUS

The system bus for the MicroVAX II, MicroVAX/VAXserver 3xxx, and VAX 4000 series systems.

RF35

A 3-1/2", half-height, 0.8-gigabyte formatted capacity DSSI disk ISE.

RF72

A 5-1/4", full-height, 1-gigabyte formatted capacity DSSI disk ISE.

RF73

A 5-1/4", full-height, 2-gigabyte formatted capacity DSSI disk ISE.

RLL

Run length limited. The format used in the DSSI ISE to record data.

SF3x

A DSSI storage enclosure that houses up to six half-height RF series disk ISEs.

SF7x

A DSSI storage enclosure that houses up to four full-height RF series disk ISEs.

single-system

Storage configuration where DSSI ISEs are connected to only one DSSI adapter and system.

split-bus

A mode of operation where the ISEs in the one side of a storage enclosure are connected to a different DSSI bus than those on the other side.

stripeset

A set of disk drives operating in concert as a single virtual disk so as to provide increased I/O performance. In a DSSI bus application, all SF7x storage enclosures are in split-bus mode and each half of each enclosure is connected to its own dedicated DSSI adapter port.

through-bus

A mode of operation when all the ISEs in an storage enclosure are connected to the same DSSI bus. In this mode, the DSSI bus is terminated using an external terminator.

TMSCP

Tape Mass Storage Control Protocol. Application layer protocol that is used by the system to perform tape I/O operations and I/O control functions.

TTM

Transition termination module. A PC board that provides connection between the storage enclosure OCP and RF series disk ISE, and also provides DSSI bus termination when in split-bus mode.

unit number

Also called the MSCP/TMSCP unit number. Default value is the ISE's DSSI node ID. A unique value can be selected using PARAMS.

VAX Diagnostic Supervisor

A diagnostic environment that allows access to DSSI tests and programs in VAX 6000 and 9000 series systems.

virtual circuit

A logical point-to-point link between nodes.

XMI

Extended Memory Interconnect. The system bus for the VAX 6000 and 9000 series systems.

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