



DIGITAL MultiSwitch 700

DLM6C-AA Overview and Setup Guide

DIGITAL MultiSwitch 700

DLM6C-AA Overview and Setup Guide

Part Number: 9032610

September 1998

This guide describes how to install and configure the DIGITAL MultiSwitch 700 DLM6C-AA chassis.

Revision/Update Information:

This is a new document.

Cabletron Systems reserves the right to make changes in specifications and other information contained in this document without prior notice. The reader should in all cases consult Cabletron Systems to determine whether any such changes have been made.

The hardware, firmware, or software described in this manual is subject to change without notice.

IN NO EVENT SHALL CABLETRON SYSTEMS BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING BUT NOT LIMITED TO LOST PROFITS) ARISING OUT OF OR RELATED TO THIS MANUAL OR THE INFORMATION CONTAINED IN IT, EVEN IF CABLETRON SYSTEMS HAS BEEN ADVISED OF, KNOWN, OR SHOULD HAVE KNOWN, THE POSSIBILITY OF SUCH DAMAGES.

© Copyright 1998 by Cabletron Systems, Inc., P.O. Box 5005, Rochester, NH 03866-5005

All Rights Reserved

Printed in the United States of America

SPECTRUM and **LANVIEW** are registered trademarks of Cabletron Systems, Inc.

DIGITAL and the DIGITAL logo are trademarks of Digital Equipment Corporation.

All other product names mentioned in this manual may be trademarks or registered trademarks of their respective companies. United States Government Restricted Rights United States Government Restricted Rights

The enclosed product (a) was developed solely at private expense; (b) contains "restricted computer software" submitted with restricted rights in accordance with Section 52227-19 (a) through (d) of the Commercial Computer Software - Restricted Rights Clause and its successors, and (c) in all respects is proprietary data belonging to Cabletron and/or its suppliers.

UNITED STATES GOVERNMENT RESTRICTED RIGHTS

The enclosed product (a) was developed solely at private expense; (b) contains "restricted computer software" submitted with restricted rights in accordance with Section 52227-19 (a) through (d) of the Commercial Computer Software - Restricted Rights Clause and its successors, and (c) in all respects is proprietary data belonging to Cabletron and/or its suppliers.

For Department of Defense units, the product is licensed with "Restricted Rights" as defined in the DoD Supplement to the Federal Acquisition Regulations, Section 52.227-7013 (c) (1) (ii) and its successors, and use, duplication, disclosure by the Government is subject to restrictions as set forth in subparagraph (c) (1) (ii) of the Rights in Technical Data and Computer Software clause at 252.227-7013. Cabletron Systems, Inc., 35 Industrial Way, Rochester, New Hampshire 03867-0505.

FCC Notice — Class A Computing Device:

This equipment generates, uses, and may emit radio frequency energy. The equipment has been type tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC rules, which are designed to provide reasonable protection against such radio frequency interference. Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference. Any modifications to this device - unless expressly approved by the manufacturer - can void the user's authority to operate this equipment under part 15 of the FCC rules.

DOC Notice — Class A Computing Device:

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

VCCI Notice — Class A Computing Device:

この装置は、情報処理装置等電波障害自主規制協議会（V C C I）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Taiwanese Notice — Class A Computing Device:

警告使用者:

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

CE Notice — Class A Computing Device:

Warning!

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Achtung!

Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.

Avertissement!

Cet appareil est un appareil de Classe A. Dans un environnement résidentiel cet appareil peut provoquer des brouillages radioélectriques. Dans ce cas, il peut être demandé à l'utilisateur de prendre les mesures appropriées.

CABLETRON SYSTEMS, INC. PROGRAM LICENSE AGREEMENT

IMPORTANT: Before utilizing this product, carefully read this License Agreement.

This document is an agreement between you, the end user, and Cabletron Systems, Inc. ("Cabletron") that sets forth your rights and obligations with respect to the Cabletron software program (the "Program") contained in this package. The Program may be contained in firmware, chips or other media. BY UTILIZING THE ENCLOSED PRODUCT, YOU ARE AGREEING TO BECOME BOUND BY THE TERMS OF THIS AGREEMENT, WHICH INCLUDES THE LICENSE AND THE LIMITATION OF WARRANTY AND DISCLAIMER OF LIABILITY. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, PROMPTLY RETURN THE UNUSED PRODUCT TO THE PLACE OF PURCHASE FOR A FULL REFUND.

CABLETRON SOFTWARE PROGRAM LICENSE

1. **LICENSE.** You have the right to use only the one (1) copy of the Program provided in this package subject to the terms and conditions of this License Agreement.

You may not copy, reproduce or transmit any part of the Program except as permitted by the Copyright Act of the United States or as authorized in writing by Cabletron.
2. **OTHER RESTRICTIONS.** You may not reverse engineer, decompile, or disassemble the Program.
3. **APPLICABLE LAW.** This License Agreement shall be interpreted and governed under the laws and in the state and federal courts of New Hampshire. You accept the personal jurisdiction and venue of the New Hampshire courts.

EXCLUSION OF WARRANTY AND DISCLAIMER OF LIABILITY

1. **EXCLUSION OF WARRANTY.** Except as may be specifically provided by Cabletron in writing, Cabletron makes no warranty, expressed or implied, concerning the Program (including its documentation and media).

CABLETRON DISCLAIMS ALL WARRANTIES, OTHER THAN THOSE SUPPLIED TO YOU BY CABLETRON IN WRITING, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE PROGRAM, THE ACCOMPANYING WRITTEN MATERIALS, AND ANY ACCOMPANYING HARDWARE.
2. **NO LIABILITY FOR CONSEQUENTIAL DAMAGES.** IN NO EVENT SHALL CABLETRON OR ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS, PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR RELIANCE DAMAGES, OR OTHER LOSS) ARISING OUT OF THE USE OR INABILITY TO USE THIS CABLETRON PRODUCT, EVEN IF CABLETRON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. BECAUSE SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, OR ON THE DURATION OR LIMITATION OF IMPLIED WARRANTIES, IN SOME INSTANCES THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU.

DECLARATION OF CONFORMITY

Application of Council Directive(s): **89/336/EEC**
73/23/EEC

Manufacturer's Name: **Cabletron Systems, Inc.**

Manufacturer's Address: **35 Industrial Way**
PO Box 5005
Rochester, NH 03867

European Representative Name: **Mr. J. Solari**

European Representative Address: **Cabletron Systems Limited**
Nexus House, Newbury Business Park
London Road, Newbury
Berkshire RG13 2PZ, England

Conformance to Directive(s)/Product Standards: **EC Directive 89/336/EEC**
EC Directive 73/23/EEC
EN 55022
EN 50082-1
EN 60950

Equipment Type/Environment: **Networking Equipment, for use in a**
Commercial or Light Industrial
Environment.

We the undersigned, hereby declare, under our sole responsibility, that the equipment packaged with this notice conforms to the above directives.

Manufacturer

Mr. Ronald Fotino

Full Name

Principal Compliance Engineer

Title

Rochester, NH, USA

Location

Legal Representative in Europe

Mr. J. Solari

Full Name

Managing Director - E.M.E.A.

Title

Newbury, Berkshire, England

Location

CONTENTS

PREFACE

Using This Guide	xi
Structure of This Guide.....	xi
Document Conventions	xii
Using the DIGITAL MultiSwitch 700 Manual Set	xii
Correspondence	xiii
Documentation Comments	xiii
World Wide Web	xiii
Getting Help.....	xiii

SAFETY

Overview.....	xv
Safety Requirements	xvi

CHAPTER 1 INTRODUCTION

1.1 Overview.....	1-1
1.2 Features	1-2

CHAPTER 2 INSTALLATION REQUIREMENTS AND SPECIFICATIONS

2.1 Site Guidelines	2-1
2.2 Configuration Guidelines	2-2
2.3 Operating Specifications.....	2-2
2.3.1 Physical Specifications	2-3
2.3.2 Power Supply Requirements	2-4
2.4 LEDs.....	2-4
2.4.1 Power Supply LEDs	2-4
2.4.2 Fan Tray LED.....	2-6

CHAPTER 3 DLM6C-AA SETUP

3.1 Unpacking the DLM6C-AA	3-1
3.2 Setting Up the DLM6C-AA.....	3-2
3.2.1 Installation Order.....	3-2
3.2.2 Installing the Cable Management Bar.....	3-3
3.2.3 Rack Mounting the DLM6C-AA.....	3-4
3.2.4 Attaching the ESD Wrist Strap.....	3-5
3.2.5 Installing a Power Supply Module.....	3-6
3.2.6 Installing DLM6C-AA Interface Modules	3-9

3.3	Powering Up a DLM6C-AA with an AC Power Supply.....	3-11
3.4	Powering Up a DLM6C-AA with a DC Power Supply.....	3-11
3.4.1	Connecting an HA205-MD to 48/60 Vdc Source	3-13
3.5	Removing and Reinstalling the Fan Tray	3-14
3.5.1	Removing the Fan Tray	3-14
3.5.2	Reinstalling the Fan Tray	3-15

PREFACE

Welcome to the DIGITAL *MultiSwitch 700 DLM6C-AA Overview and Setup Guide*. This guide explains how to set up and configure the DLM6C-AA chassis.

USING THIS GUIDE

Read through this guide completely to familiarize yourself with its contents and to gain an understanding of the features and capabilities of the DLM6C-AA chassis. This guide lists the features and options of the chassis, explains how to remove and reinstall the fan tray, and explains how to install the power supplies, modules, and the cable management bar. A general working knowledge of data communications networks is helpful when setting up the DLM6C-AA chassis.



In this document, the DIGITAL MultiSwitch 700 DLM6C-AA chassis is referred to as either the “DLM6C-AA” or the “chassis.”

STRUCTURE OF THIS GUIDE

This guide is organized as follows:

Chapter 1, **Introduction**, discusses the features and capabilities of the DLM6C-AA.

Chapter 2, **Installation Requirements and Specifications**, lists the location requirements that must be met before installing the DLM6C-AA in a cabinet or rack. This chapter also includes some configuration guidelines, environmental guidelines, and operating specifications for the DLM6C-AA and related power supply modules.

Chapter 3, **DLM6C-AA Setup**, contains instructions for rack mounting the DLM6C-AA, removing and reinstalling the fan tray, installing the power supplies, modules, and cable management bar, and powering up the DLM6C-AA.

DOCUMENT CONVENTIONS

Throughout this guide, the following symbols are used to call attention to important information.



Note symbol. Calls the reader's attention to any item of information that may be of special importance.



Caution symbol. Contains information essential to avoid damage to the equipment.



Electrical Hazard Warning symbol. Warns against an action that could result in the personal injury or death due to an electrical hazard.

USING THE DIGITAL MULTISWITCH 700 MANUAL SET

Other manuals have been developed for the interface modules that can be installed in the DLM6C-AA chassis. These manuals explain how to install the modules into the DLM6C-AA chassis, how to attach cable segments to the modules, and how to configure the modules using Local Management after installation is complete. Specifications for all modules are included in each manual.

Each manual in this set assumes that the qualified personnel installing the module has a general working knowledge of data communications networks and their physical layer components.

CORRESPONDENCE

Documentation Comments

If you have comments or suggestions about this manual, send them to DIGITAL Network Products:

Attn.:	Documentation Project Manager
E-MAIL:	doc_quality@lkg.mts.dec.com

World Wide Web

To locate product-specific information, refer to the DIGITAL Network products Home Page on the World Wide Web at the following locations:

North America:	http://www.networks.digital.com
Europe:	http://www.networks.europe.digital.com
Asia Pacific:	http://www.networks.digital.com.au

GETTING HELP

Contact your DIGITAL representative for technical support. Before calling, have the following information ready:

- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)

SAFETY

OVERVIEW

Any warning or caution that appears in this manual is defined as follows:

	WARNING	Warns against an action that could result in equipment damage, personal injury, or death.
	VORSICHT	Warnt den Benutzer vor Aktionen, die das Gerät beschädigen, Personen verletzen oder sogar zum Tod führen könnten.
	DANGER	Déconseille à l'utilisateur d'exécuter une action pouvant entraîner des dommages matériels, corporels voire même la mort.
	AVISO	Previene contra una acción que podría dañar el equipo, provocar daños personales o la muerte.
	CAUTION	Contains information essential to avoid damage to the equipment.
	ACHTUNG	Liefert wichtige Informationen, um einen Geräteschaden zu vermeiden.
	ATTENTION	Informations indispensables permettant d'éviter les dommages matériels.
	PRECAUCIÓN	Contiene información esencial para evitar daños al equipo.

SAFETY REQUIREMENTS

The warnings or cautions that must be observed for the hardware described in this manual are listed below in English, German, French, and Spanish.

	WARNING	Only qualified personnel should install or service this unit.
	VORSICHT	Diese Einheit darf nur von qualifizierten Fachleuten installiert oder gewartet werden.
	DANGER	L'installation et la maintenance de cet appareil sont réservées à un personnel qualifié.
	AVISO	Sólo el personal cualificado debe instalar o dar mantenimiento a esta unidad.
	WARNING	If theDLM6C-AA is to be placed on a shelving unit, the shelf must be able to support 75 pounds. If the DLM6C-AA is to be rack mounted, care must be taken to ensure that the rack used will support the unit and that the rack remains stable with the DLM6C-AA installed. If the rack is not secured to the floor, it is recommended that the chassis be installed in the bottom half of the rack. This prevents the rack from being top heavy. Two people may be required to lift the chassis into place.

VORSICHT	Wenn der DLM6C-AA auf einem Regal platziert werden soll, muß das Regal eine Last von ca. 34 Kilogramm (75 Pfund) unterstützen können. Wenn der DLM6C-AA dagegen in einem Einschubgehäuse installiert werden soll, muß der Einschub die Einheit stützen können und nach der Installation des DLM6C-AA stabil bleiben. Wenn das Einschubgehäuse nicht am Boden befestigt ist, wird die Installation im unteren Teil des Gehäuses empfohlen, da andernfalls der obere Teil zu schwer und nicht stabil sein könnte. Eventuell sind zwei Personen zum Einsetzen in das Gehäuse erforderlich.
DANGER	Si l'appareil DLM6C-AA doit être monté sur un support, celui-ci doit pouvoir accepter un poids de 34 kg. Si l'appareil doit être monté sur un rack, assurez-vous que celui-ci est prévu pour cela et qu'il restera stable une fois l'appareil installé. Si le rack n'est pas fixé au sol, il est recommandé d'installer le châssis dans la partie inférieure du rack, pour ne pas surcharger la partie supérieure. Prévoir deux personnes pour insérer le châssis.
AVISO	Si el DLM6C-AA se va a colocar en una unidad de estantes, el estante deberá ser capaz de aguantar 34 kg. Si el DLM6C-AA se va a montar en bastidor, es preciso asegurarse de que el bastidor tenga capacidad para aguantar la unidad y de que permanecerá estable una vez instalado el DLM6C-AA. Si el bastidor no está fijado al suelo, se recomienda instalar el chasis en la mitad inferior del bastidor, para evitar que la parte superior del mismo se venza por exceso de peso. Es conveniente pedir la ayuda de otra persona para colocar el chasis en su lugar.

WARNING	To reduce the risk of electric shock or energy hazards: Ensure the branch circuit overcurrent protection is rated at a minimum of 25 A. Use the 10 AWG solid copper conductors only. Ensure that a readily accessible disconnect device that is suitably approved and rated, is incorporated in the field wiring. To be installed in a restricted access area in accordance with the NEC or the authority having jurisdiction.
VORSICHT	Um Elektroschock und Stromgefahr zu vermeiden: Stellen Sie sicher, daß die Überstromschutzeinrichtung des Verzweigungsstromkreises auf mindestens 25 A eingestellt ist. Verwenden Sie nur 10 AWG-Kupferhalbleiter. Ein genehmigtes, leicht zugängliches Trenngerät mit angemessener Strom- und Spannungsleistung muß in der Feldverkabelung integriert sein. Die Installation darf nur in einem Gebiet mit begrenztem Zutritt entsprechend dem NEC oder der zuständigen rechtlichen Behörde erfolgen.
DANGER	Pour réduire les risques de choc électrique et de tout danger afférent : assurez-vous que la protection du circuit accepte au minimum 25 A. N'utilisez que des conducteurs en cuivre type 10 AWG. Vérifiez qu'un appareil de déconnexion adapté et facilement accessible soit installé sur la câblage. L'installation doit être faite conformément aux règlements en vigueur dans le pays concerné.

AVISO	Para reducir el riesgo de descarga eléctrica o peligros relacionados con la energía: Asegúrese de que la protección contra sobretensión del circuito de derivación sea como mínimo de 25 A. Use únicamente conductores de cobre sólido de calibre 10 AWG. Asegúrese de que el cableado general tenga incorporado un dispositivo de desconexión accesible inmediatamente que cuente con la aprobación y las especificaciones adecuadas. Deberá instalarse en una zona de acceso restringido de conformidad con el estándar NEC o las autoridades competentes.
WARNING	To prevent injury or damage to the equipment, remove power from a 48/60 Vdc power source before connecting to an HA205-MD dc power supply.
VORSICHT	Um Verletzungsgefahr und Beschädigungen am Gerät zu vermeiden, sollte die Verbindung zum 48/60-Gleichstromnetz vor dem Anschluß an eine HA205-MD-Gleichstromverbindung unterbrochen werden.
DANGER	Pour prévenir les dommages corporels et matériels, débranchez la source d'alimentation 48/60 VCC avant de brancher l'appareil sur une alimentation HA205-MD.
AVISO	Para evitar lesiones personales y el deterioro del equipo, desconecte la toma de la fuente de alimentación de corriente continua de 48/60 V antes de realizar la conexión a una fuente de alimentación de corriente continua HA205-MD.



CAUTION	To prevent damaging the backplane connectors in the following step, take care that the module slides in straight and properly engages the backplane connectors.
ACHTUNG	Um die Anschlüsse an der Rückseite bei diesem Schritt nicht zu beschädigen, stellen Sie sicher, daß das Modul gerade eingeschoben und vorsichtig eingesetzt wird.
ATTENTION	Pour éviter d'endommager les connecteurs du « backplane » lors de l'étape suivante, veillez à ce que le module glisse tout droit et s'adapte correctement aux connecteurs du « backplane ».
PRECAUCIÓN	Para evitar dañar los conectores del plano posterior en el paso siguiente, verifique que el módulo se deslice derecho y se adapte correctamente a los conectores del plano posterior.

CAUTION	The DLM6C-AA and the host module or hub are sensitive to static discharges. Use an antistatic wrist strap and observe all static precautions during this procedure. Failure to do so could result in damage to this equipment.
ACHTUNG	Der DLM6C-AA und das Host-Modul bzw. der Hub sind für statische Entladungen empfindlich. Benutzen Sie deshalb ein Antistatikarmband, und beachten Sie während dieses Verfahrens alle diesbezüglichen Vorsichtsmaßnahmen. Bei Nichtbeachtung könnte das Gerät beschädigt werden.
ATTENTION	L'appareil DLM6C-AA ou le module hôte sont sensibles à l'électricité statique. Au cours de cette procédure, utilisez des bracelets antistatiques et respectez toutes les précautions relatives à l'électricité statique. Si vous ne tenez pas compte de ces conseils, vous risquez d'endommager cet équipement.
PRECAUCIÓN	DLM6C-AA y el hub o módulo de host es sensible a la descarga estática. Utilice una banda antiestática para la muñeca y observe todas las precauciones sobre estática durante este procedimiento. Si no se cumple con estos requisitos, se puede dañar el equipo.

CHAPTER 1

INTRODUCTION

1.1 OVERVIEW

The DIGITAL DLM6C-AA chassis design provides five 2.4-inch slots that can contain a variety of interface modules. The chassis supports redundant power supplies, LANVIEW diagnostic LEDs, and is 19-inch rack mountable. All chassis components (power supplies, fan tray, and modules) are installed from the front of the chassis for ease of maintenance. All LED indicators are observable from the front of the chassis to aid in monitoring network operational status. Figure 1-1 illustrates the DLM6C-AA equipped with redundant power supplies.

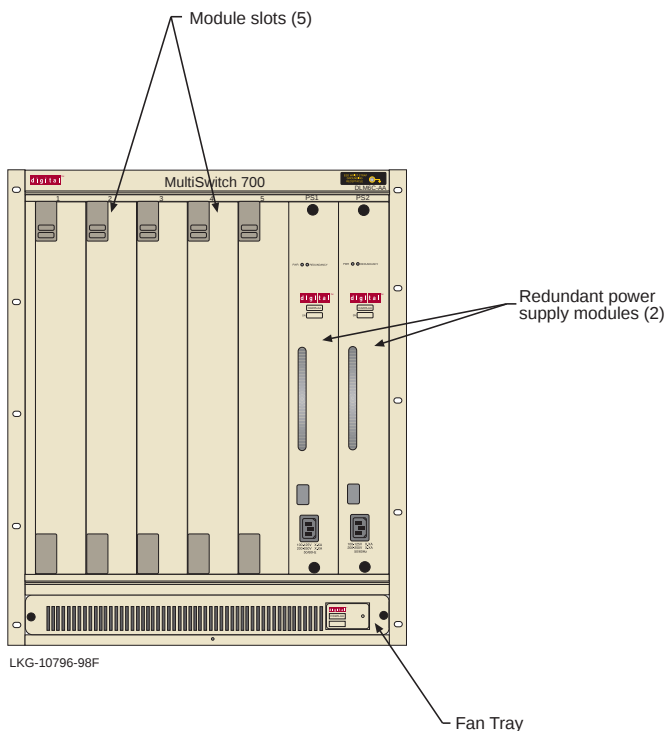


Figure 1-1 The DLM6C-AA Chassis With Redundant Power Supplies

1.2 FEATURES

Redundant Power Supply Modules

The DLM6C-AA supports two power supply modules that reside in the slots labeled PS1 and PS2.



If the DLM6C-AA is configured with a single power supply module, it **must** be located in slot PS1.

Installing one ac power supply and one dc power supply in the same chassis is NOT allowed.

The DLM6C-AA ac power supply module (HA205-AA) supports an ac input connector that allows the power supply to be connected to a separate ac power source. DIGITAL also offers a dc power supply module (HA205-MD) that supports a dc input connector that allows the power supply to be connected to a separate dc power source. In addition, two power supply modules are capable of load sharing 50% (+/- 5%) of the total load presented by the DLM6C-AA. If one of the power supply modules fails, the other power supply module supplies the entire load of the chassis without interruption to network traffic.

Power Supply LANVIEW LEDs

Each power supply module comes equipped with LEDs for at-a-glance diagnostics that indicate individual power supply status and overall chassis redundancy status. Refer to Chapter 2, **Installation Requirements and Specifications**, for a full explanation of the power supply LEDs and their definitions.

Power Supply Status Using Local Management

The DLM6C-AA power supply modules report information to the modules installed in the chassis regarding the present operating status. This information includes the following:

- Power Supply ID (PS1, PS2)
- Power Supply Status (normal/fault/not installed)
- Power Supply Redundancy Indication (redundant/not available)
- Fan Tray Status (normal/fault/not installed)

Refer to the module specific user's guide for instructions on how to access power supply status information using Local Management.

Auto-Ranging Power Supplies

The DLM6C-AA power supply modules automatically adjust to the input voltage and frequency. No additional adjustments are necessary.

Hot Swapping

To reduce network downtime, the power supply modules are also hot swappable. This allows for the removal of one power supply without powering down the chassis and interrupting network traffic.

The DLM6C-AA Cooling System

The DLM6C-AA features a removable fan tray that is accessible from the front of the unit. This unit is hot swappable, which allows it to be replaced without powering down the chassis. The fan tray has one LANVIEW LED located on the front of the unit. This LED indicates the status of the fan tray (normal or fault). Refer to **Chapter 2** for a full description of fan tray LED states and their definitions.

Rack Mountable Chassis

The DLM6C-AA can be mounted into a standard 19-inch (48.26 cm) equipment rack. The DLM6C-AA chassis has rackmount brackets built into the chassis for ease of installation.

CHAPTER 2

INSTALLATION REQUIREMENTS AND SPECIFICATIONS

This chapter describes the following:

- Site guidelines that must be met before installing a DLM6C-AA into a rack or cabinet
- DLM6C-AA configuration guidelines
- Operating specifications for the DLM6C-AA enclosure and power supply modules



Only qualified personnel should install or service this unit.

2.1 SITE GUIDELINES

The following guidelines must be followed when a site is selected for the DLM6C-AA. If the guidelines are not followed, unsatisfactory network performance may result.

- To allow proper cooling within the rack, there must be 3 inches of clearance above the unit and 2 inches of clearance on either side of the unit.
- If the DLM6C-AA is to be placed on a shelving unit, the shelf must be able to support 75 pounds of static weight.
- If the DLM6C-AA is to be rack mounted, care must be taken to ensure that the rack used will support the unit and that the rack remains stable with the DLM6C-AA installed.
- The HA205-AA ac power supply requires a standard three-pronged power receptacle that is located within 6 feet of the site.
- The temperature of the location must be maintained between 5° and 40°C (41° to 104°F). Temperature changes of greater than 10°C (18°F) per hour must not occur.

- The HA205-MD dc power supply requires a 10 American Wire Gauge (AWG) solid copper conductor with #6 ring terminals.

2.2 CONFIGURATION GUIDELINES

The DLM6C-AA has 5 slots that accept interface modules. The slots are numbered 1 to 5 beginning from the left. There are two additional slots located on the far right of the chassis that are reserved for power supply modules. These slots are labeled PS1 and PS2. DIGITAL modules for the DLM6C-AA are equipped with a firmware-based management tool called Local Management, which provides the capability to configure the module, and access chassis, power supply, and fan tray information. These modules are also SNMP compliant to allow remote management through SNMP software, such as the Cabletron Systems SPECTRUM for Open Systems suite of management products.

2.3 OPERATING SPECIFICATIONS

The following lists the specifications for the DLM6C-AA chassis, fan tray, and power supplies. Cabletron Systems reserves the right to change these specifications without notice.

Environment

Operating Temperature:	5°C to 40°C (41°F to 104°F)
Storage Temperature:	-30°C to 73°C (-22°F to 164°F)
Operating Relative Humidity:	5% to 90% (non-condensing)

Regulatory Compliance

Safety:	UL 1950, CSA C22.2 No. 950, EN 60950, 73/23/EEC, and IEC 950
Electromagnetic Compatibility (EMC):	FCC Part 15,VCCI V-3, CSA C108.8, EN 50082-1, 89/336/EEC, and EN 55022

2.3.1 Physical Specifications

The physical specifications for the DLM6C-AA chassis, H3105-AA fan tray, and the HA205-MD and HA205-AA power supply modules are as follows:

DLM6C-AA Chassis

Dimensions: 62.23 H x 44.04 W x 35.56 D (cm)
24.5 H x 17.34 W x 14 D (in)

Weight (with factory
installed fan tray): 11.7 kg (26 lb)

HA205-MD Power Supply

Dimensions: 44.63 H x 6.05 W x 32.77 D (cm)
17.57 H x 2.38 W x 12.9 D (in)

Weight: 3.65 kg (8.1 lb)

HA205-AA Power Supply

Dimensions: 44.63 H x 6.05 W x 32.77 D (cm)
17.57 H x 2.38 W x 12.9 D (in)

Weight: 4.73 kg (10.5 lb)

H3105-AA Fan Tray

Dimensions: 6.57 H x 43.64 W x 34.82 D (cm)
2.59 H x 17.18 W x 13.71 D (in)

Weight: 1.58 kg (3.5 lb)

2.3.2 Power Supply Requirements

The power supply requirements for the DLM6C-AA power supply modules are as follows:

HA205-MD DC Power Supply

Input Frequency: NA
Input: (Voltage/Current): 48/60 Vdc, 17 Amps

HA205-AA AC Power Supply

Input Frequency: 50/60 Hz
Input: (Voltage/Current): 100 to 125 Vac, 8 Amps
200 to 250 Vac, 4 Amps

2.4 LEDs

The following sections describe the functions and definitions of the LEDs for the DLM6C-AA power supply modules and fan tray unit.



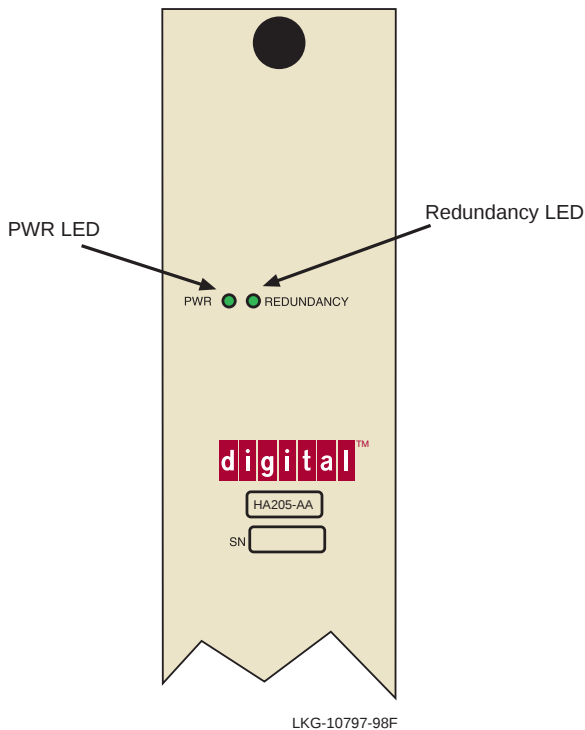
Both power supplies available for the DLM6C-AA chassis have the same LEDs.

2.4.1 Power Supply LEDs

There are two LEDs on the power supply. Table 2-1 describes the different states of the power supply LEDs and their definitions. Refer to Figure 2-1 for the location of power supply LEDs.

Table 2-1 Power Supply LED States and Their Definitions

LED Name	Color	Status
PWR (Power)	Green	All outputs and input of the power supply are within regulation.
	Red	Any output or input of the specific power supply is out of regulation.
REDUNDANCY	Green	Redundancy is available.
	Amber	Redundancy is possible, but not available (two power supplies are installed).
	Off	Redundancy not possible. (One power supply installed.)

**Figure 2-1 Power Supply LEDs**

2.4.2 Fan Tray LED

The following table describes the different states of the fan tray LED and their definitions. Refer to Figure 2-2 for the location of the fan tray LED.

Table 2-2 Fan Tray LED States and Their Definitions

LED Color	Status
Green	All fans are operating normally.
Red	One or more fan failures have occurred.



When the DLM6C-AA is first powered up, the fan tray LED will display red briefly, until the fans are operating at the proper speed.



Figure 2-2 Fan Tray LED

CHAPTER 3

DLM6C-AA SETUP

This chapter contains instructions on setting up the DIGITAL DLM6C-AA chassis. A Phillips screwdriver is needed to install the unit in a 19-inch equipment rack, to install the cable management bar, to secure the power supply module, and to remove and reinstall the fan tray. Refer to **Chapter 2** for the guidelines that must be followed to install the DLM6C-AA.



Only qualified personnel should install or service this unit.

3.1 UNPACKING THE DLM6C-AA



Unpack DLM6C-AA components only as needed. Leave the components in their respective shipping cartons until you are ready to install that component.



Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

To unpack the DLM6C-AA, proceed as follows:

1. Unpack the DLM6C-AA by carefully removing it from the shipping box. (Save the shipping box and materials in the event the chassis has to be reshipped.)
2. Remove the chassis from the protective plastic bag. (Save the bag in the event the unit must be reshipped.)
3. Examine the DLM6C-AA carefully, checking for damage. If any damage is noted, DO NOT install the chassis. Contact your DIGITAL representative immediately.
4. Remove the accessory package.
5. Remove the ESD wrist strap package.

6. Remove the Console Cable Kit and set aside. This kit will be needed to set up the modules for the DLM6C-AA through Local Management.

3.2 SETTING UP THE DLM6C-AA

The following sections describe the procedures that must be followed to complete the installation of the DLM6C-AA.

3.2.1 Installation Order

Once a suitable site has been chosen, the DLM6C-AA can be installed. The chassis can be freestanding or rack mounted.

It is recommended that the DLM6C-AA installation proceed in this order:

1. Install the cable management bar.
2. Mount the chassis to a 19-inch rack or other secure location.
3. Attach the ESD wrist strap.
4. Install the power supply module(s).
5. Install the interface modules.

3.2.2 Installing the Cable Management Bar

To install the cable management bar, proceed as follows:

1. Remove the cable management bar from the shipping box. Ensure that there are four screws inside the bag with the cable management bar.
2. Refer to Figure 3-1. Line up the two holes on each side of the cable management bar with the two holes located underneath the DLM6C-AA, near the front of the chassis.
3. Using a Phillips screwdriver securely fasten the 4 screws.

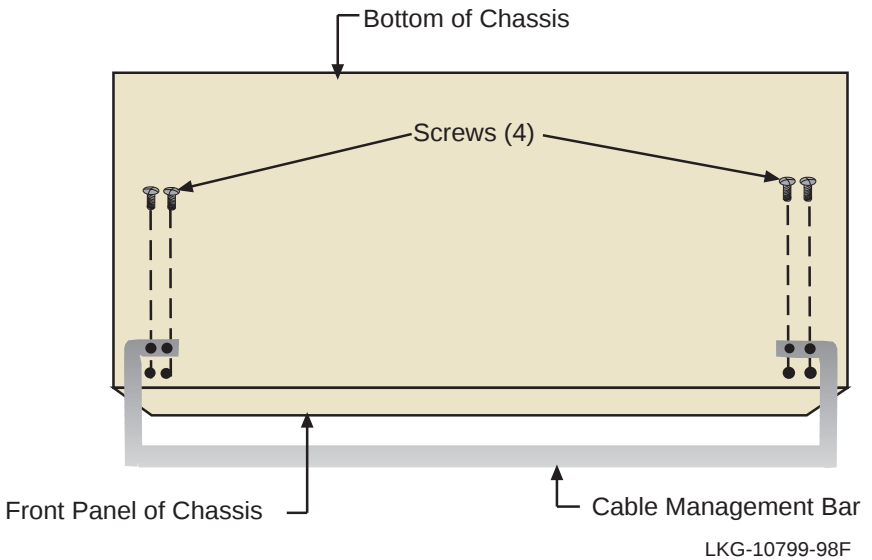


Figure 3-1 Installing the Cable Management Bar

3.2.3 Rack Mounting the DLM6C-AA

The DLM6C-AA can be mounted in a standard 19-inch equipment rack.



If the rack is not secured to the floor, it is recommended that the chassis be installed in the bottom half of the rack. This prevents the rack from being top heavy.



Read Chapter 2 in this manual before completing the following procedure.

Two people may be required to lift the chassis into place.

The chassis is secured with ten screws, five on each side. Using the screws provided with the equipment rack, secure the DLM6C-AA to the rack, starting with the bottom holes and working up, as shown in Figure 3-2.

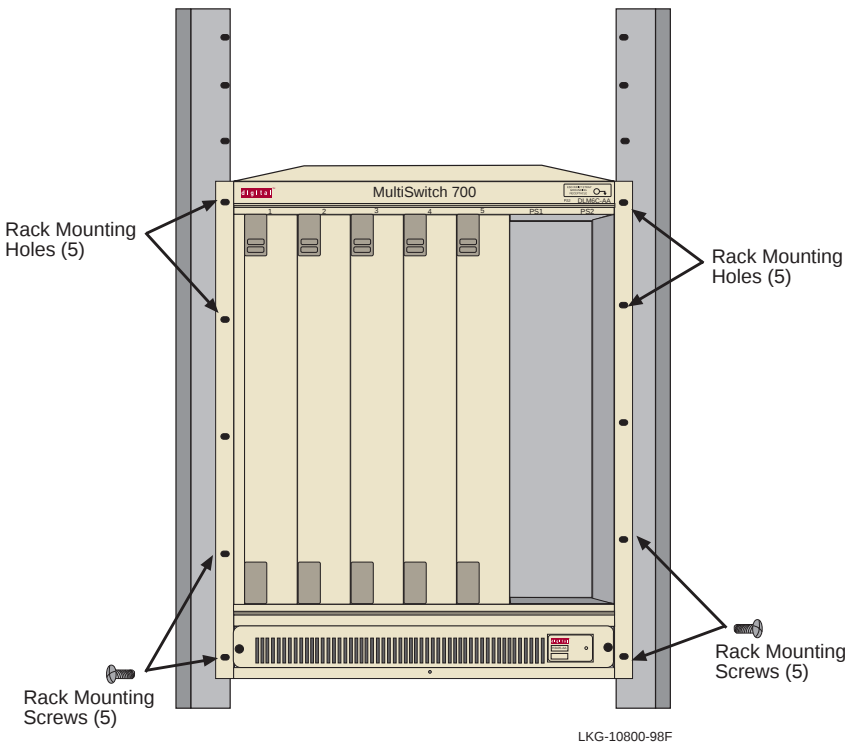


Figure 3-2 Rack Mounting the DLM6C-AA

3.2.4 Attaching the ESD Wrist Strap

The ESD wrist strap must be attached before handling the DLM6C-AA power supplies, fan tray, or modules. In addition, observe all precautions when handling these modules to prevent damage from ESD.

Place the wrist strap on your wrist and plug the other end into the grounding receptacle, at the top right corner of the chassis, shown in Figure 3-3.

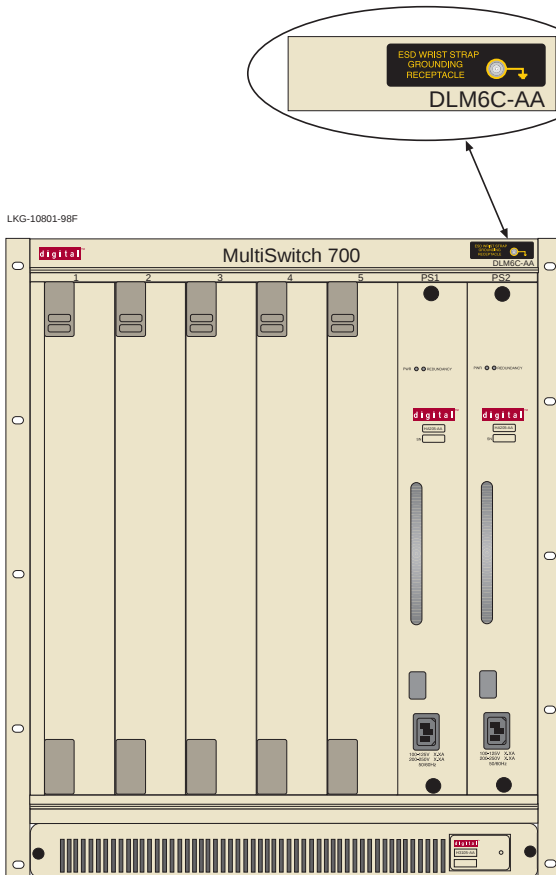


Figure 3-3 ESD Grounding Receptacle

3.2.5 Installing a Power Supply Module

You must install at least one power supply in the DLM6C-AA chassis. One power supply provides sufficient power for most module configurations but a second power supply can be installed to provide a redundant, load-sharing power source. When two power supplies are installed, the load is evenly distributed. If one power supply fails for any reason, the second power supply assumes the load.



If the DLM6C-AA is configured with a single power supply module, it **must** be located in slot PS1.

The DLM6C-AA power supplies must be installed in the two slots labeled PS1 and PS2 on the far right side of the chassis (Figure 3-4). If you intend to install a single power supply it must be installed in the slot labeled PS1 in the chassis. A flat blade screwdriver is needed to install the power supply modules.

To install the power supplies into the DLM6C-AA chassis, refer to Figure 3-4 and proceed as follows:

1. Unpack the power supply by removing it from the shipping box and sliding the two foam end caps off the unit. (Save the shipping box and materials in the event the unit must be reshipped.)
2. Remove the power supply from its protective plastic bag. (Save the shipping box and materials in the event the unit must be reshipped.)
3. Examine the power supply carefully, checking for damage. If any damage is noted, DO NOT install the power supply. Contact your DIGITAL representative immediately.

4. Slide the power supply module into the slot labeled PS1 as follows:
 - a. Hold the module by placing one hand on the handle located on the module front panel and using the other hand to support the body of the module.
 - b. With the LED at the top of the power supply module, align the circuit card of the power supply module with the slotted paths on the top and bottom of the opening.



Forcing a misaligned module into place can damage the module and/or the chassis backplane.

- c. With the power supply inserted into the slotted paths, carefully slide the module forward until it is connected to the backplane with the front panel flush with the face of the DLM6C-AA. Do not force the module into place. If significant resistance is encountered before the front panel is flush, remove and reinsert the power supply.
 - d. Secure the power supply to the chassis by using a screwdriver to tighten the two slotted screws on the top and bottom of the power supply. For proper chassis grounding, the screws must be properly tightened.
5. If you are installing a second power supply, remove the blank plate from the second power supply slot (keep the blank plate in the event you need to remove the power supply), and repeat steps 1–4.

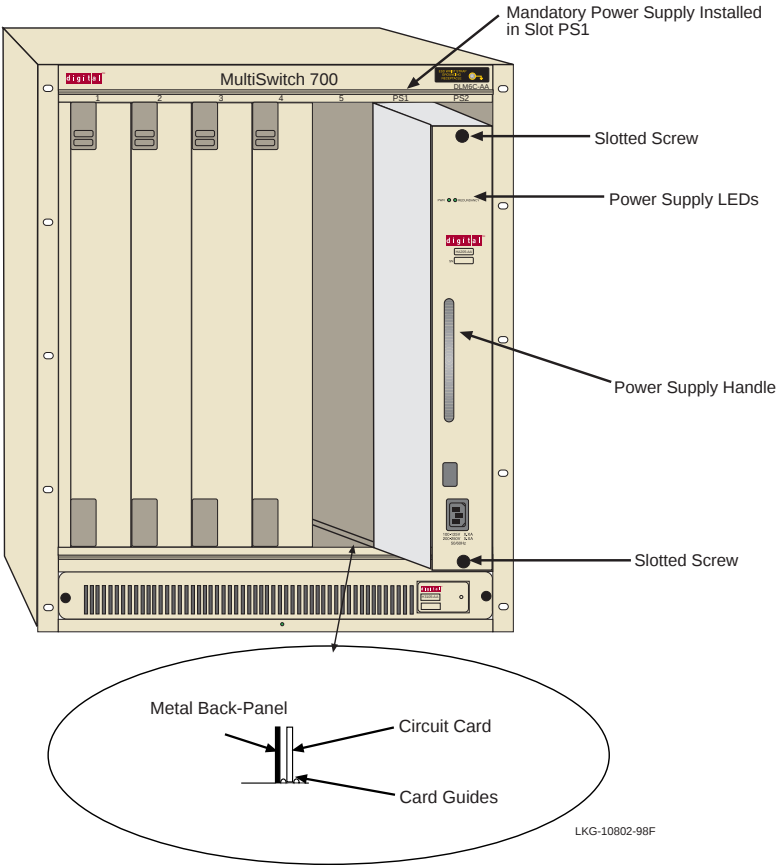


Figure 3-4 Installing the Power Supply Module

After installation of the power supply modules is completed, the DLM6C-AA is ready to be powered up; however, DIGITAL recommends that installation of all modules for the DLM6C-AA be completed before powerup. Refer to the following sections to complete the installation.

3.2.6 Installing DLM6C-AA Interface Modules

The DLM6C-AA interface modules can be installed in any of the 5 slots that are available. To install a module, proceed as follows:

1. Remove the blank panel covering the slot in which the interface module will be installed. All other slots must remain covered to ensure proper airflow and cooling. (Save the blank plate in the event you need to remove the module.)
2. Carefully remove the module from the shipping box. (Save the box and packing materials in the event the module must be reshipped.)
3. Locate the ESD wrist strap shipped with the DLM6C-AA. Attach the wrist strap to your wrist and plug the cable from the wrist strap into the ESD grounding receptacle at the upper right corner of the DLM6C-AA.
4. Remove the module from the plastic bag. (Save the bag in the event the module must be reshipped.) Observe all precautions to prevent damage from ESD.
5. Examine the module for damage. If any damage exists, **DO NOT** install the module. Contact your DIGITAL representative immediately.



To prevent damaging the backplane connectors in the following step, take care that the module slides in straight and properly engages the backplane connectors.



In the following step ensure that the top plastic locking tab lines up with the desired slot number located on the front panel of the chassis. Refer to Figure 3-5.

6. Locate the slot guides that line up with the number of the slot in which the module will be installed. Install the interface module in the chassis by aligning the module circuit card between the upper and lower metal rail guides of the desired slot, sliding it into the chassis, and locking down the top and bottom plastic locking tabs, as shown in Figure 3-5. Take care that the interface module slides in straight and properly engages the backplane connectors.

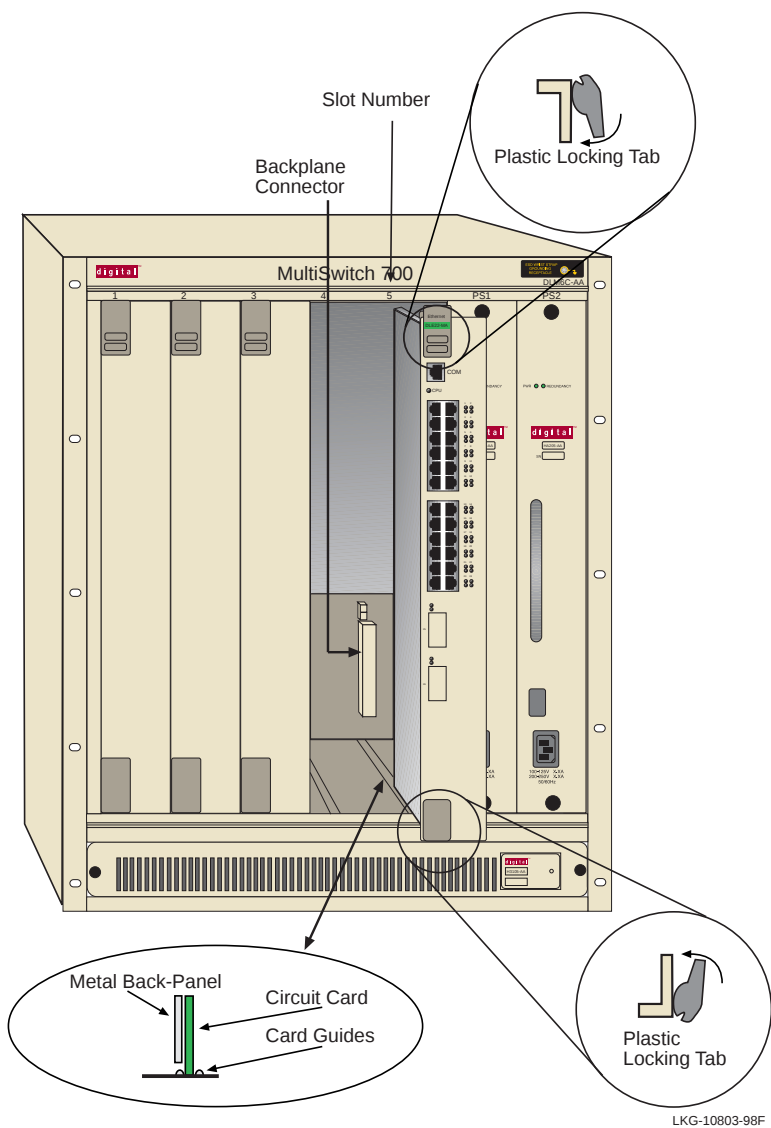


Figure 3-5 Installing a Module

3.3 POWERING UP A DLM6C-AA WITH AN AC POWER SUPPLY

To power up a DLM6C-AA with the HA205-AA ac power supply module, proceed as follows:



If two power supplies are installed, repeat the following procedure for each supply.

1. Plug one end of the power cord (supplied with the power supply) into the ac power socket on the bottom of the power supply.
2. Plug the other end of the power cord into an ac receptacle. Turn on the power supply using the switch located above the power socket.
3. Ensure that the power LED is green.
4. Ensure that all fans in the fan tray unit are operating properly when power is received from the power supply modules (fan tray LED will be green).

If you experience any problems during the installation of the DLM6C-AA, contact your DIGITAL representative for assistance.

3.4 POWERING UP A DLM6C-AA WITH A DC POWER SUPPLY

This section provides information on how to connect the HA205-MD dc power supply to 48 or 60 Vdc (48/60 Vdc) power sources. The HA205-MD is installed and functions the same as the ac power supply for the DLM6C-AA. The dc power supply has an on/off switch and an input power strip, and is rated at 510 watts. The on/off power switches and input power strips are similar to the ones shown in Figure 3-6.



The on/off switch on the HA205-MD power supply contains a 30 Amp circuit breaker.

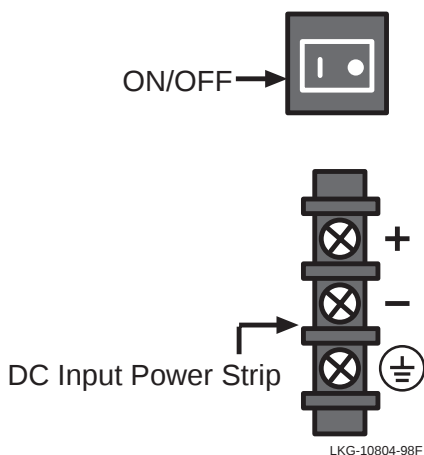


Figure 3-6 Power Supply DC ON/OFF Switch and DC Input Power Strip



ONLY QUALIFIED PERSONNEL SHOULD PERFORM THESE INSTALLATION PROCEDURES.



TO REDUCE THE RISK OF ELECTRIC SHOCK OR ENERGY HAZARDS:

- CONNECT TO A RELIABLY GROUNDED 48/60 VDC SELV SOURCE.
- ENSURE THE BRANCH CIRCUIT OVERCURRENT PROTECTION IS RATED AT A MINIMUM OF 25 A.
- USE 10 AWG SOLID COPPER CONDUCTORS ONLY.
- ENSURE THAT A READILY ACCESSIBLE DISCONNECT DEVICE THAT IS SUITABLY APPROVED AND RATED, IS INCORPORATED IN THE FIELD WIRING.

TO BE INSTALLED IN A RESTRICTED ACCESS AREA IN ACCORDANCE WITH THE NEC OR THE AUTHORITY HAVING JURISDICTION.

DC Power Supply Requirement for Each Supply

Each dc power supply input requires either a 48 Vdc or 60 Vdc power source, rated at a minimum of 17 Amps.

Installation Requirement

Each dc power supply input requires either a 48 Vdc or 60 Vdc power source supplied by three 10 AWG copper wires. These wires must be terminated with either ring or spade terminals that accept a #6 screw.

3.4.1 Connecting an HA205-MD to 48/60 Vdc Source

To connect the HA205-MD to a 48/60 Vdc power source, face the front of the power supply, then refer to Figure 3-7 and proceed as follows:

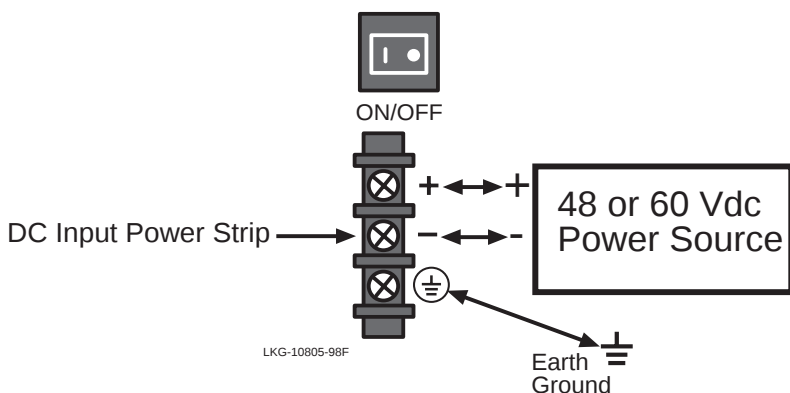


Figure 3-7 48/60 Vdc Power Supply Connections



To prevent injury or damage to the equipment, remove power from a 48/60 Vdc power source before proceeding with the following steps.

1. Connect the ground (⊕) terminal of the dc input power strip to an appropriate earth ground.
2. Refer to Figure 3-7 for the proper connections to a 48/60 Vdc power source. Then connect the output leads of the 48/60 Vdc power source being used to the negative (-) and positive (+) terminals on the dc input power strip.

3. Repeat steps 1 and 2, if applicable, to connect a 48/60 Vdc power source to a second HA205-MD installed in the chassis.
4. Restore power to the 48/60 Vdc power sources.
5. Press the on/off power switch of each power switch to on.



The HA205-MD sounds an audible alarm if there is a polarity reversal. If the alarm sounds, turn off the 48/60 Vdc power source to that power supply. Then reverse the positive and negative leads to the dc input power strip of that power supply. Restore power from the 48/60 Vdc power source. If the alarm sounds again, press the power switch to off, then contact your DIGITAL representative.

If you experience any problems during the installation of the DLM6C-AA, contact your DIGITAL representative for assistance.

3.5 REMOVING AND REINSTALLING THE FAN TRAY

The DLM6C-AA is equipped at the factory with a removable fan tray that allows for easy periodic cleaning and/or replacement if a problem occurs with fan operation. A flat blade screwdriver is needed to remove and reinstall the fan tray. To remove and reinstall the fan tray in the DLM6C-AA, refer to Section 3.5.1 and Section 3.5.2.



The fan tray is hot swappable; however, the chassis must not be run without the fan tray for extended periods of time, as it will quickly overheat.

3.5.1 Removing the Fan Tray

To remove the fan tray, refer to Figure 3-8 and proceed as follows:

1. Locate the ESD wrist strap shipped with the DLM6C-AA. Attach the wrist strap to your wrist and plug the cable from the wrist strap into the ESD grounding receptacle at the upper right corner of the DLM6C-AA.
2. Use a screwdriver to loosen the slotted screws located on either side of the fan tray.
3. Slowly slide the fan tray out of its slot in the bottom of the chassis.

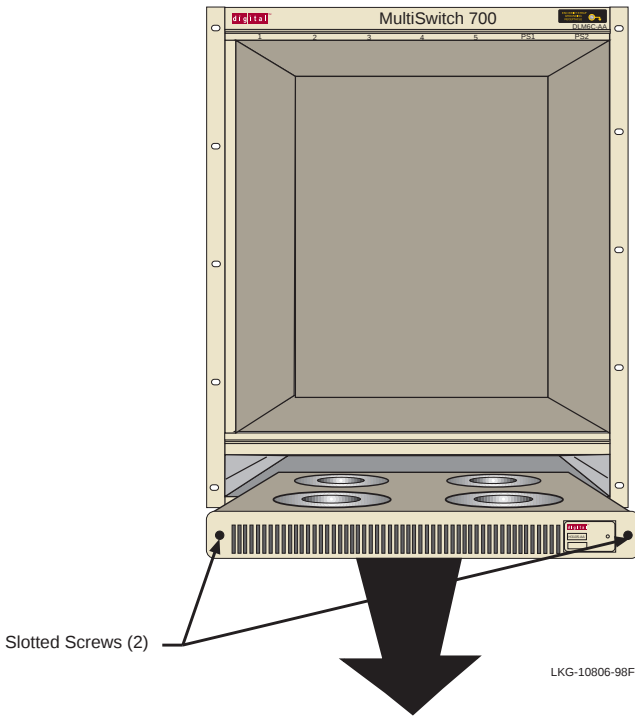


Figure 3-8 Removing the Fan Tray

3.5.2 Reinstalling the Fan Tray

To reinstall the fan tray, refer to Figure 3-9 and proceed as follows:

1. Locate the ESD wrist strap shipped with the DLM6C-AA. Attach the ESD wrist strap to your wrist and plug the cable from the ESD wrist strap into the ESD grounding receptacle at the upper right corner of the DLM6C-AA.
2. Hold the sides of the fan tray.

3. Line up the rails on each side of the fan tray with the slot guides on the chassis.



In the following step ensure that you do not force the fan tray into place, as it may damage the unit.

4. Slide the fan tray forward until the faceplate of the tray is flush with the face of the DLM6C-AA. If there is any strong resistance, remove the fan tray and reinsert it.
5. Once the tray is in place, tighten the slotted screws with a screwdriver to secure the tray to the DLM6C-AA.
6. When the DLM6C-AA is ready to be powered on, observe the LED on the front of the fan tray. This LED should be red for a moment after the power switch is turned on, and then change to green to indicate that all fans are operating properly. If this LED remains red, it indicates that one or more of the fans are not operating at the proper speed. Check the fan tray to ensure that nothing is interfering with the movement of the fans; also, check to make sure nothing is blocking the air vents on the chassis or the fan tray. If the problem cannot be located, contact your DIGITAL representative for assistance.



The fan tray is hot swappable; however, the chassis must not be run without the fan tray for extended periods of time, as it will quickly overheat.

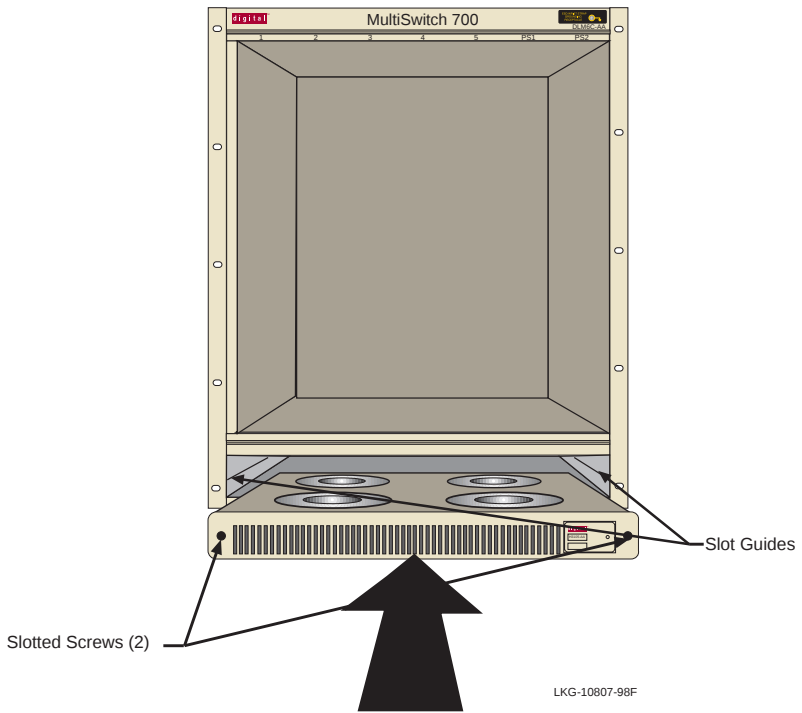


Figure 3-9 Reinstalling the Fan Tray

digital