Backup PSU Installation Guide

Mandatory regulations

General requirements

The sections that follow outline the mandatory regulations governing the installation and operation of the Backup PSU. Adherence to these instructions is necessary to ensure that regulatory compliance requirements are met. For safe operation and servicing, the socket-outlet shall be installed near the equipment and shall be easily accessible. This equipment must be earthed.

Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) this device must accept any interference that may cause undesired operation.

European Directives

The CE mark indicates that the requirements of the following European Directives have been met

- 89/336/EEC Electromagnetic Compatibility Directive
- 73/23/EEC Low Voltage Directive
- 93/68/EEC CE Marking Directive

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.

Industry Canada

This Class A digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Food and Drug Administration (FDA)

The product complies with FDA 21 CFR 1040.10 and 1040.11 regulations which govern the safe use of lasers.

Acknowledgments

Release date: August 1996

Safety information: read this first

The following icons are used throughout the guide for safety purposes. You are advised to read, and understand clearly, any procedure marked with these icons.

Hazard: A hazard icon calls attention to a procedure in the installation manual which, if not correctly performed, could result in injury or loss of life. Do not proceed beyond a section marked by this symbol until you fully understand the procedure and can meet the required conditions.

Warning: A warning icon indicates the presence of a hazardous voltage.

Informations de sécurité: lissez attentivement le passage suivant, avant toute autre manipulation

Les icônes suivantes sont utilisées tout au long de ce guide pour les informations de sécurité.

Danger: Une icône de DANGER avertit qu'il existe une procédure spécifique dans le manuel d'installation, si celle-ci n'est pas scrupuleusement respectée, l'utilisateur prend le risque d'une blessure grave, voir la perte de vie. N'avancez pas dans une section qui est marquée par cette icône avant de comprendre entièrement la procédure en question. Assurez-vous de bien remplir les conditions nécessaires.

Attention: Une icône d'avertissement indique la présence d'un voltage dangereux.

Sicherheitsinformation: zuerst lesen

Die folgenden Symbole werden in diesem Handbuch aus Gründen Ihrer Sicherheit verwendet. Wir raten Ihnen jede Prozedur, die mit diesen Symbolen gekennzeichnet ist, aufmerksam zu lesen und genau zu verslehen.

Gefahr: Das Gefahrsymbol macht auf jene Verfahren im Installationshandbuch aufmerksam, die zu Verletzung oder Tod führen können, wenn die Prozedur nicht richtig ausgeführt wird. Fahren Sie unter keinen Umständen fort, wenn Sie dieses Symbol sehen, bevor Sie die Prozedur verslehen und die notwendigen Voraussetzungen erfüllen können.

Warnung: Das Warnsymbol weist auf vorliegende, gefährliche Stromspannung hin.

Safety information: associated documents

To make sure you do not injure yourself or damage your Madge product:

English	Read Madge Networks Safety Guidelines (part number: 102-002) before installing the product.
Chinese	在安装产品之前, 请读 Madge 网络产品安全指示 (102-002 部分).
Dansk	Læs Retningslinjer for sikkerhed mht. Madge netværk (delnummer: 102-002), før produktet installeres.
Nederlands	Lees eerst de Richtlijnen voor de veiligheid van Madge netwerken (artikelnummer 102-002) voordat u dit product installeert.
Suomi	Lue Madge-verkkojen turvaohjeet (osa numero: 102-002) ennen tuotteen asennusta.
Français	Lire les Règles de sécurité pour réseaux Madge (Référence No : 102-002) avant d'installer le produit.
Deutsch	Vor dem Installieren des Produkts die Sicherheitsrichtlinien für Madge Netzwerke (Teilenummer: 102-002) lesen!
Greek	Διαβάστε τις Οδηγίες Ασφαλείας για Δίκτυα **Madge** (αριθμός τεμαχίου: 102-002) πριν εγκαταστήσετε το προϊόν.

Hebrew	קרא את הוראות הבטיחות לרשתות Madge (מס' פריט: 102-002) לפני התקנת המוצר
Italiano	Leggere le Linee orientative per la sicurezza delle reti Madge (n. parte: 102-002) prima di installare il prodotto.
Japanese	製品を取り扱う前に、マッジ ネットワークスのセーフティ ガイドラインをお読みください。（部品番号：102-002）
Norsk	Les Sikkerhet for Madge-nettverk (delnr. 102-002) før du installerer produktet.
Português	Leia as Instruções de Segurança dos Produtos Madge Networks (ref.a 102-002) antes de instalar o produto.
Español	Antes de instalar el producto, lea las Normas de seguridad de las redes Madge (número de pieza: 102-002).
Svenska	Läs gärna "Madge nätverk: säkerhetsföreskrifter" (delnummer: 102-002) innan du installerar produkten.

Contents

Introduction

This chapter describes the the Backup PSU, the PSU Module, and the Collage 740 Backbone ATM Switch.

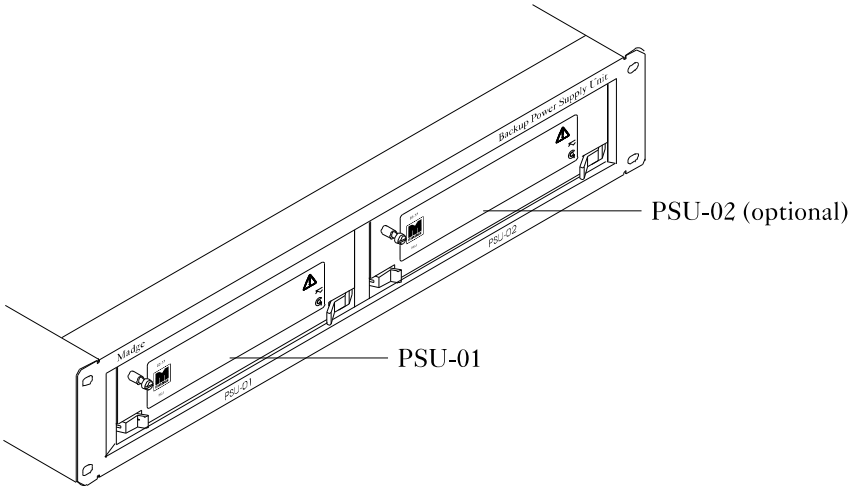
About the Backup PSU

The Backup PSU provides the Collage 740 Backbone ATM Switch with increased resilience by insuring against the possibility of a fault in the internal PSU Module. When you connect a Backup PSU to a Collage 740, the Backup PSU provides power to the switch's backplane. The Collage 740's internal PSU Module and the PSU Module in the Backup PSU share the power load to the Collage 740, so that if one power supply fails, the other unit supplies the full power load.

You can connect the Backup PSU to one Collage 740 for each PSU Module that is installed. The Backup PSU supports a maximum of two PSU Modules, called PSU-01 and PSU-02, which means you can connect it to a maximum of two Collage 740s.

Note: The Backup PSU package contains one PSU Module, one mains cable, and one DC power cable. To connect the Backup PSU to a second Collage 740, you need one additional PSU Module (part number: 57-77) and one additional cable set (part number: 57-98).

Figure 1.1 Backup PSU with two PSU Modules installed



About the Collage 740 Backbone ATM Switch

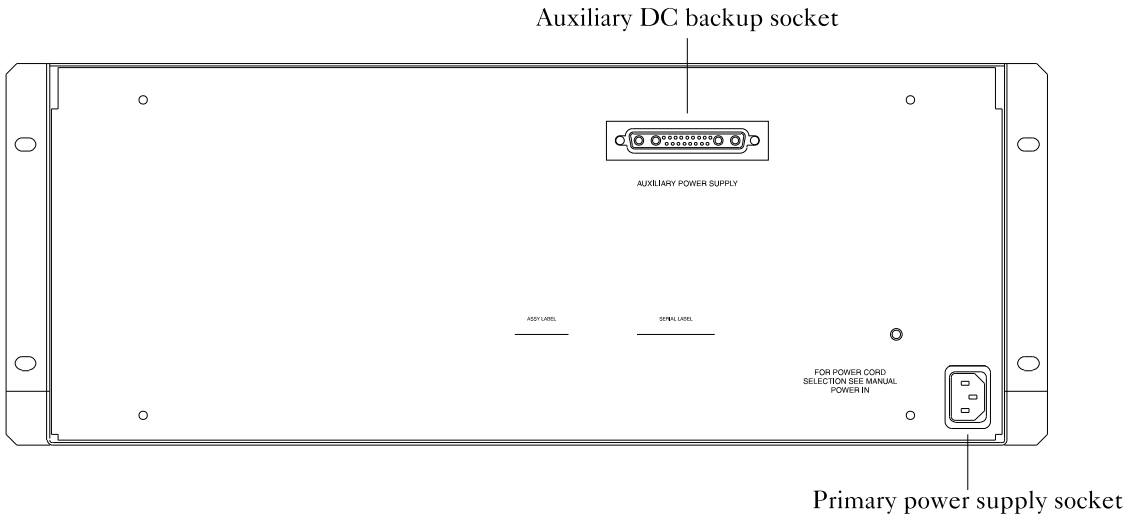
The Collage 740 Backbone ATM Switch is a high-performance Asynchronous Transfer Mode (ATM) switch for building and campus backbone applications, high-performance centralized servers, and power-user environments.

Power sockets on the Collage 740 rear panel

The rear panel of the Collage 740 has two power sockets: an AC mains socket and a DC Backup PSU socket to support a Backup PSU. The primary AC mains socket enables you to connect the power cable provided with the Collage 740, to supply power to the internal PSU Module.

The auxiliary DC backup socket enables you to connect a Backup PSU to the Collage 740.

Figure 1.2 Rear panel of the Collage 740



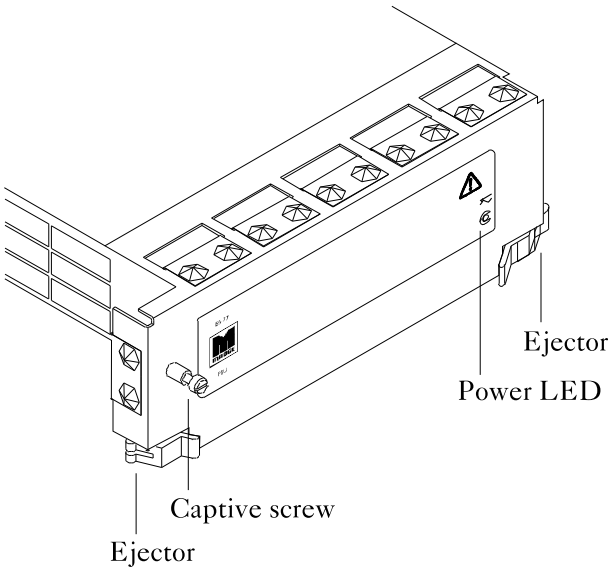
PSU Module

The PSU Module provides power via the backplane of the Collage 740 or the Backup PSU.

You can install a maximum of one PSU Module into the Collage 740, and a maximum of two PSU Modules into the Backup PSU. No external connectors are required. You can order a PSU Module by quoting part number 57-77.

The front panel of the PSU Module has an LED labelled ‘Power’ that indicates the status of the PSU Module.

Figure 1.3 PSU Module



Installing the Backup PSU

Hazard: To make sure you do not injure yourself or damage your Madge product, always refer to the installation manual and the *Madge Safety Guide* (part number: 100-002) before installing hardware. If you are in any doubt, contact your customer support representative.

When you install the Backup PSU for the first time, the installation procedure consists of the following tasks:

1 Rack-mounting the Backup PSU
   The Backup PSU is designed to fit into a standard 480 mm (19 in.) rack.
2 Connecting the power cables

Warning: Electrical current from power, telephone, and communications cables is hazardous. To avoid an electrical shock when installing or moving the product or devices attached to the product, connect and disconnect cables as shown in the *Madge Safety Guide* (part number: 100-002).

Prerequisites

This section lists the parts and tools you require to install the Backup PSU.

Note: Before you attempt to power up the Backup PSU, read through the entire installation procedure.

Parts and tools

To install the Backup PSU, you need the following parts and tools:

- 3/8 in. flat-blade screwdriver for the installation screws
- 1 electrostatic discharge (ESD) cord and wrist strap

Associated manuals

When you have installed the Backup PSU according to the instructions in this manual, refer to the *Collage 740 Backbone ATM Switch User Guide* (part number: 100-239) for information about setting up and managing the Collage 740.

The Collage 740 is a software-upgradable product, which means you can expand the functionality of the switch by downloading new microcode software. The *Collage 740 Backbone ATM Switch User Guide* contains information about configuring the Collage 740 with a particular software release. Make sure the manual is up-to-date for the software release that you have downloaded to the Collage 740.

Electrical equipment

Follow these basic guidelines when working with any electrical equipment:

- Before beginning any procedures requiring access to the interior of the unit, locate the emergency power-off switch for the room in which you are working.
- Before moving the unit, disconnect all power and external cables.
- If potentially hazardous conditions exist, do not work alone.
- Never assume that power is disconnected from a circuit; always check.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.
- Carefully examine your work area for possible hazards such as moist floors and ungrounded power cables.
- Only connect the product to a correctly wired and earthed receptacle.

Warning: Do not attempt to remove the backplate on the rear panel of the Collage 740. Removing the backplate exposes you to hazardous voltages that could cause injury or loss of life.

Unpacking the unit

When you unpack the Backup PSU, make sure you keep the original packaging materials. You may need them to store, transport, or return the product.

Check you have received a complete Backup PSU package before installing the unit. If any items are missing or damaged, please contact Madge Networks' technical support services immediately. For information about contacting Madge Networks' technical support services, see Appendix B.

The Collage 740 package should contain:

- 1 Backup PSU, with 1 PSU Module pre-installed
- 1 *Backup PSU Installation Guide* (this manual, part number: 100-240)
- 1 mains power cable
- 1 DC power cable

Rack-mounting the Backup PSU

Note: The Backup PSU chassis weighs 7.1 kg (15.62 Ibs). Another person should be present to support the unit whilst you secure the Backup PSU with the installation screws.

The Backup PSU occupies 2U, which is 88 mm (3.5 in.), of vertical space in a standard 480 mm (19 in.) rack. The Backup PSU has built-in mounting brackets.

Note: If you are mounting the Backup PSU in a rack, always mount the product before connecting power cables to it.

Before you mount the Collage 740 in a rack, make sure that:

- There are no power cables connected to the Backup PSU.
- There is 2U, which is 88 mm (3.5 in.), of vertical space above or below the Collage 740 switch that you plan to connect to the Backup PSU. If you plan to connect the Backup PSU to two Collage 740 switches, mount the Backup PSU between the switches in the rack.
- The Backup PSU will be situated close enough to the Collage 740 switch such that the 0.5 m (19.69 in.) connection cable will reach both units.
- There is a clearance of 40 mm (1.575 in.) around the sides of the Collage 740 to enable the internal fans to disperse heat.

To mount the product in a rack:

1 Position the Backup PSU in the rack by aligning the two holes in the mounting bracket with the holes in the rack.

Note: If you plan to connect the Backup PSU to two Collage 740 switches, mount the Backup PSU between the switches in the rack. If the Backup PSU is not mounted directly above or below a Collage 740 it serves, the DC power cables will not be long enough to connect the devices.

2 With the base of the product supported by another person, secure the Backup PSU in the rack.

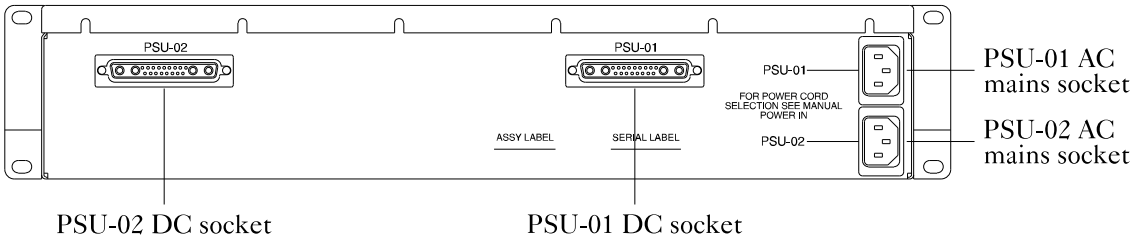
3 Make sure the load is distributed evenly in the rack.
Do not use the Backup PSU to support other equipment. This can put excessive strain on the mounting points and result in damage to the unit.

Hazard: When the switch is installed in a rack, the temperature of the environment surrounding the device may exceed the ambient temperature of the room. Provide a greater clearance if necessary, and take care not to block the air vents of the Backup PSU. Blocking the air vents reduces the amount of air flow and may damage the unit.

Connecting the power cables

When you have mounted the Backup PSU in a rack, connect the unit to the Collage 740, then connect it to the AC outlet with the power cables provided.

Figure 2.1 Sockets on the rear panel of the Backup PSU



The Backup PSU package contains one mains cable and one DC power cable. You need one mains cable and one DC power cable for each Collage 740 you connect to the Backup PSU.

You can connect the Backup PSU to one Collage 740 for each PSU Module that is installed. The Backup PSU supports a maximum of two PSU Modules, enabling you to connect it to a maximum of two Collage 740s.

Note: To connect the Backup PSU to a second Collage 740, you will need one additional PSU Module (part number: 57-77) and one additional cable set (part number: 57-98).

Installation comprises the following steps:

1 Checking the cord set
2 Connecting the Backup PSU to the Collage 740
3 Installing a second PSU Module into the Backup PSU, if you want to connect the Backup PSU to two Collage 740s.

Checking the cord set

For units used at 115V, use a UL-listed and CSA-certified (or equivalent) cord set consisting of:

- A minimum of 18 AWG, type SVT or SJT, three-conductor cord that is a maximum of 4.5 meters (15 feet) long
- A parallel blade, grounding-type attachment plug rated 15A and 125V

For units used at 230V (for use within the United States), use a UL-listed and CSA-certified (or equivalent) cord set consisting of:

- A minimum of 18 AWG, type SVT or SJT, three-conductor cord that is a maximum of 4.5 meters (15 feet) long
- A tandem blade, grounding-type attachment plug rated 15A and 250V

For units used at 230V, use a cord set consisting of a minimum of 18 AWG cord with a grounding-type attachment plug rated 15A and 250V.

Make sure that the cord set has the appropriate safety approvals for the country in which the equipment will be installed, and that it is designated as harmonized.

Hazard: For safe operation and servicing, the AC outlet must be located near the product and be easily accessible.

Connecting the Backup PSU to the Collage 740

To connect the Backup PSU to a Collage 740:

1 Take the DC power cable provided in the Backup PSU package.

2 The rear panel of the Backup PSU has two DC sockets (see Figure 2.1). Each of the sockets corresponds to a PSU Module in the Backup PSU. Connect one end to the DC socket that corresponds to the PSU Module that will supply power to the Collage 740.

3 Tighten the screws fully to secure the connector.

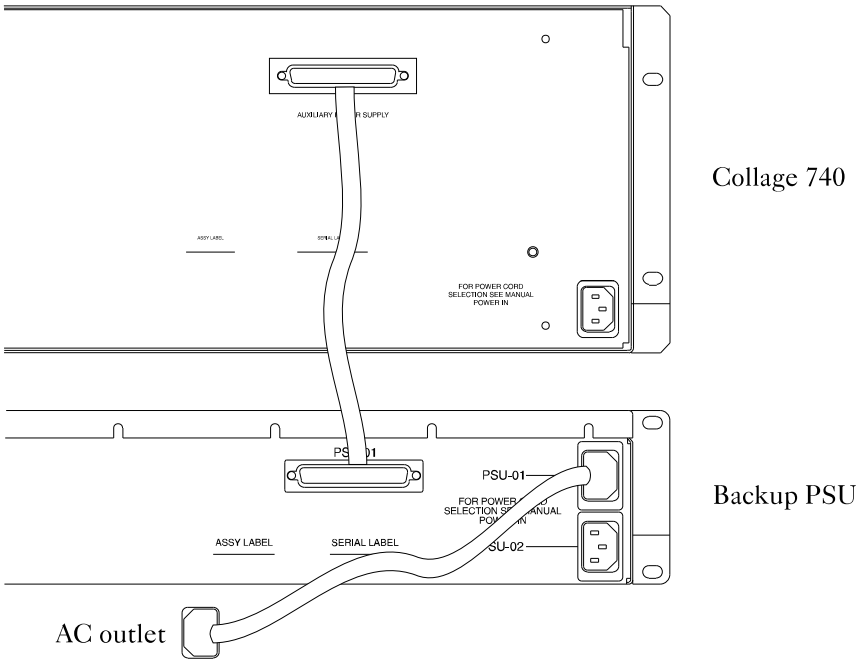
4 Connect the other end to the DC socket on the rear of the Collage 740.

5 Tighten the screws fully to secure the connector.

Note: The Collage 740 may already be powered-up before you connect the Backup PSU. If the Collage 740 has a working PSU Module installed, you can connect and disconnect the Backup PSU without affecting the operation of the Collage 740.

Figure 2.2 shows how to connect the cables for module PSU-01, which resides in the left-hand module slot in the Backup PSU.

Figure 2.2 Connecting the DC power cable and mains cable for module PSU-01



Connecting the Backup PSU to the AC outlet

To connect the Backup PSU to the AC outlet:

1 Take the mains power cables provided in the Backup PSU package.

2 The rear panel of the Backup PSU has two AC mains sockets (see Figure 2.1). Each of the sockets corresponds to a PSU Module in the Backup PSU. Connect one end to the AC mains socket that corresponds to the PSU Module that will supply power to the Collage 740.

3 Connect the other end to the AC outlet.

Hazard: Only connect the power cable to a correctly wired and earthed receptacle.

4 Switch on the power.

Installing a second PSU Module into the Backup PSU

If you install a second PSU Module into the Backup PSU, you can connect the Backup PSU to two Collage 740s. The Backup PSU supports the online insertion and removal of PSU Modules. You can install a second PSU Module without powering off the Backup PSU.

Note: Only attempt to replace the PSU Module whilst the power is connected if the switch has Collage 740 software release 1.1 or later.

To install a second PSU Module into the Backup PSU:

1 Unscrew the blanking plate on the front of the Backup PSU and remove it.
2 Prepare the replacement module by pressing the ejectors away from the center of the card.
3 Supporting the underside of the module with one hand, line up the replacement module with the card guides in the top-left slot that was occupied by the module that you removed.
4 Holding the ejectors with both hands, push the module towards the back of the unit.

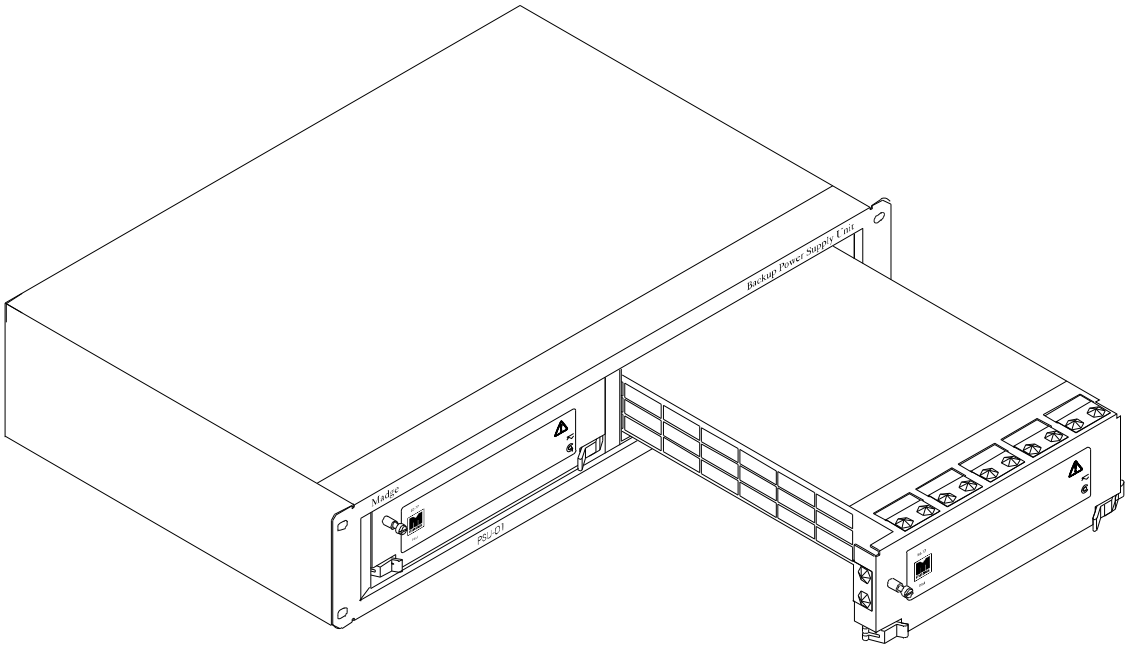
Note: If the module does not slide into the chassis smoothly, do not force it. Check that the module is aligned with the card guides.

5 When you are sure that the module is fully seated in the backplane, press the ejectors on the replacement PSU Module towards the center of the module. If the ejectors do not move easily, gently push the module towards the rear of the unit to make sure that the module is seated properly.
6 Using a flat-blade screwdriver, completely tighten the captive screw.

Removing a PSU Module from the Backup PSU

If a PSU Module is faulty, or you need to reconfigure the hardware, you may need to remove a PSU Module from the Backup PSU.

Figure 2.3 Removing module PSU-02 from the Backup PSU



To remove the internal PSU Module:

1 Disconnect the mains power cable corresponding to the PSU Module you want to remove. The mains power cable connects the Backup PSU to the AC outlet.
   — Disconnect the mains power cable from the AC outlet.
   — Disconnect the mains power cable from the AC mains socket on the rear of the Backup PSU.
2 Disconnect the DC power cable corresponding to the PSU Module you want to remove. The DC power cable connects the Backup PSU to the Collage 740.
   — Disconnect the DC power cable from the DC socket on the rear of the Collage 740.
   — Disconnect the DC power cable from the DC socket on the rear of the Backup PSU.
3 Using a flat-blade screwdriver, completely loosen the captive screw above the left-hand ejector.
4 Press the ejectors on the existing PSU Module away from the module and, holding the ejectors with both hands, pull the PSU Module away from the unit.
5 Support the underside of the module with one hand, and remove it from the chassis. Place the removed module on an antistatic mat or foam pad, or place it in an antistatic bag if you will return it to the factory.
6 Replace the removed PSU Module with either a blanking plate, or a replacement PSU Module (see “Installing a second PSU Module into the Backup PSU” in this chapter).

Warning: When you remove a module, always replace it with a blanking plate or another module. Leaving option slots empty creates a fire hazard and violates the certification status of the product.

Technical specifications

This appendix provides:

- Physical specifications
- Ordering information

Physical specifications

This section provides physical specifications for the Backup PSU.

Dimensions

This section provides the dimensions of the chassis.

Table A.1 Backup PSU dimensions

Feature	Description
Width	444 mm (17.5 in.)
Height	88mm (3.47 in.)
Depth	305 mm (12 in.)
Weight	7.1 kg (15.62 Ib)

Power requirements

This section provides power requirements.

Table A.2 Collage 740 power requirements

Feature	Description
Universal power entry	100-120/200-240V AC 50/60Hz
Max power dissipation	400 watts per PSU (800 watts max.)

Environmental specifications

This section provides environmental specifications.

Table A.3 Collage 740 environmental specifications

Feature	Description
Storage temperature	-10 - 60°C (14 - 140°F)
Operating temperature	10 - 40°C (50 - 104°F)
Humidity	10-90%RH non-condensing

Ordering information

Table A.4 provides information about ordering the Backup PSU and PSU Module.

Table A.4 Backup PSU ordering information

Part number	Description
57-91	Backup Power Supply Unit (PSU)
57-77	Power Supply Unit (PSU) Module
57-98	Backup PSU Power Cables

You can also order:

- The Collage 740 base product, and spares and replacement parts
  For information about ordering the Collage 740, refer to the *Collage 740 Backbone ATM Switch Installation Guide* (part number: 100-238).
- Option cards
  For information about ordering option cards and modules for the Collage 740, refer to the *Collage 740 Option Cards Installation Guide* (part number: 100-244).

Technical support services

Technical support is available to all Madge customers.

To receive technical support:

- Use the PC Vendor G Forum on CompuServe.
- Use the Madge Networks section on NIFTY-Serve (only accessible in Japan)
- Email Technical Support (see "Telephone, fax, BBS, and email" on page 25)
- Telephone Madge Technical Support (see "Telephone, fax, BBS, and email" on page 25)

To get software upgrades and product information:

- Use the Bulletin Board System (BBS)
- Use the PC Vendor G Forum on CompuServe
- Use the Worldwide Web home page (http://www.madge.com)
- Use Madge Networks' FTP server (ftp.madge.com)
- Contact your local Madge office or representative

Worldwide Web (WWW)

To access the Madge Networks service on the web, use either a web browser or FTP software.

Using a web browser

To access the full home page service, enter the URL:

http://www.madge.com

To access the Japanese home page service, enter the URL:

http://www.madge-jp.com

Using FTP software

If you do not have a web browser, you can still download new or updated software by using FTP software.

If you use FTP software:

1 Connect to ftp.madge.com

2 Connect to ftp.madge-jp.com/pub, for the Japanese service.
The system prompts you for your login name.

3 Type ANONYMOUS
The system prompts you for a password.

4 Type your full email address.

Once this is complete, you can issue file transfer commands.

Telephone, fax, BBS, and email

Region	Support Service	Support Number
Europe, Middle East, Africa	Telephone	+44 1628 858700
	Fax	+44 1628 858977
	BBS	+44 1628 858008
	Email	eurtech@madge.com
Americas	Telephone	800 876 2343
	BBS	+1 408 955 0262
	Email	us-suprt@madge.com
Asia, Australia, New Zealand	Telephone	+852 2593 9839
	BBS	+852 2593 9829
	Email	support@madge.com
Japan	Telephone	+81 3 5232 3275
	Fax	+81 3 5232 3276
	Email	support@madge.com

Toll-free regional support numbers.

Country	Number
Americas	800 876 2343
Australia	02 9936 1739 *
Austria	0660 8366
Belgium	0800 10485
Denmark	800 17649
Finland	0800 118 074
France	05 90 82 50
Germany	0130 868828
Hong Kong	2593 9839 *
Israel	177 440 2530
Italy	1678 72092
Malaysia	800 4137

Country	Number
Netherlands	06022 7120
Norway	800 11759
Portugal	0505 44 4602
Singapore	800 852 3151
South Africa	0800 991013
Spain	900 974412
Sweden	020 793127
Switzerland *(French)*	155 6432
Switzerland *(German)*	155 1057
Thailand	2231 8191 *
United Kingdom	Lo-call: 0345 125539

* Indicates local telephone numbers where the calls are charged at the normal rate

CompuServe

If you are a CompuServe member, access the Madge Networks Section by typing GO MADGE at the ! prompt or, load a Windows application such as WinCIM, and type MADGE in the Go option from the Services menu.

Madge Networks' service on CompuServe provides the following facilities:

- Message section
- Library
- Conference area
- Latest software releases

For customers who have not experienced the benefits that access to CompuServe can bring, Madge Networks offers a free introductory membership. This includes a user-ID and password, one month's access to all of CompuServe's Basic services, and an introductory US$15 usage credit that enables you to access the Madge Networks Section of the PC Vendor G Forum and CompuServe's other Extended and Premium services. You also get complimentary subscription to the monthly CompuServe magazine. To obtain your free introductory membership, call:

Area	Number
UK	0800 289378
Germany	0130 3732
Rest of Europe	+44 272 255111
Americas	800 524 3388
Rest of the world	+1 614 457 0802

NIFTY-Serve

This is an equivalent service to CompuServe but is only available in Japan.

Log into NIFTY-Serve and, at the **>** prompt, type GO FLANVA.

Bulletin Board System (BBS)

Madge Networks maintains a free 24-hour Bulletin Board System (BBS) that provides the latest software and technical support information.

You need a modem to access the BBS. We recommend you use an ANSI (VT100) terminal emulator (for example, ProComm) with your serial port set to: 8-bit data, NO parity check, and ONE stop bit. This is because it is likely that any other setup will cause transmission errors. The BBS supports modem speeds of up to 14 400 baud (with MNP5). Download protocols supported are X Modem, Y Modem, and Z Modem.

Because the BBS is an open system, anyone can log in. The first time that you log in, the system prompts you for your name and for a password. It also asks you to complete a brief questionnaire. Please take the time to complete the questionnaire. The system displays Madge's license agreement and asks you to acknowledge it.

When you log in on subsequent occasions, make sure you enter the same name and password that you entered when you first logged in. The system tells you the last time that you logged in, asks whether you want to read the bulletins, and tells you whether there are any new mail messages for you.

To find out more about the Madge BBS service call:

Area	Number
Germany	0180 535 7273
Rest of Europe	+44 1628 858008
Americas	+1 408 955 0262
Asia, Australia, New Zealand	+ 852 2593 9829

Madge FaxBack

The Madge FaxBack Product Information Service (based in the United States) is an international service for all Madge customers.

To request technical support documents, marketing documents, and information about seminars and events organized by Madge Networks, phone +1 408 383 1002.

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