Getting Started: Smart Ringswitch Family

Smart Ringswitch Software Release 4.4

for trouble-free installations, read this guide...

Before you start

Safety

To ensure you do not injure yourself or damage equipment, read *Madge Networks Safety Guidelines* (part number 102-002) before installing the product. *Madge Networks Safety Guidelines* is on the accompanying CD.

The manual

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Notes, cautions, and warnings

Note: A note icon indicates information that you should observe.

Caution: A caution icon indicates the possibility of damage to data or equipment.

Warning: A warning icon indicates the possibility of a threat to personal safety.

Introduction

This guide describes how to get started with Ringswitch products supported by Smart Ringswitch Software Release 4.4.

Installing the products

To find the information you require:

- if you have a new Smart Ringswitch Plus Chassis, refer to Chapter 1, page 7
- if you have a new Smart Ringswitch Express, refer to Chapter 2, page 11
- if you have a new Smart Ringswitch Express Select, refer to Chapter 2, page 11
- if you have a replacement Switch Module, refer to Chapter 3, page 13
- if you have a new Option Module, refer to Chapter 4, page 15
- if you have a new Secondary PSU, refer to Chapter 5, page 21
- if you want troubleshooting advice, refer to Chapter 6, page 23

Products supported by this release

Ringswitch products supported by Smart Ringswitch Software Release 4.3 are:

- Smart Ringswitch Plus Chassis
- Smart Ringswitch Express
- Smart Ringswitch Express Select
- Smart Ringswitch Plus Switch-3 Module
- Secondary PSU
- Option Modules:
  - Smart Ringswitch 4-Port TR Copper Module
  - Smart Ringswitch 4-Port TR Fiber Module
  - Smart Ringswitch 8-Port TR Copper Module
  - Smart Ringswitch 8-Port TR Fiber Module
  - Smart GroupSwitch Module
  - Smart Ringswitch 2-Port HSTR Fiber Module
  - Smart Ringswitch 4-Port HSTR Copper Module
  - Smart Ringswitch 8-Port HSTR Copper Module
  - Smart Ringswitch 8-Port HSTR Fiber Module
  - Smart Ringswitch TLS Module
  - Smart Ringswitch ATM 155-MMF Module
  - Smart Ringswitch ATM 155-SMF Module
  - Smart Ringswitch FDDI Module
  - Smart Ringswitch 2-Port Ethernet Module
  - Smart Ringswitch Gigabit Module

Using Multi-Download to upgrade your Ringswitch

Multi-Download is a feature that Madge provides in Ringswitch software Release 3.3 and later. Multi-Download simplifies the upgrades of Ringswitch software by combining downloadable files into a single file including Switch bootcode, Switch microcode, HSTR microcode, ATM microcode, Ethernet microcode, Gigabit microcode and TLS microcode.

More information about the Smart Ringswitch Family

For further information about the Smart Ringswitch Family, refer to the *Smart Ringswitch Family User Guide* (part number: 100-291).

For further information about the Smart Ringswitch Gigabit Module, refer to *Using the Smart Ringswitch Gigabit Module* (part number: 100-398).

Installation requirements

Caution: Make sure the sum of the current ratings for the modules you install does not exceed the maximum permissible rating for your Ringswitch. See Appendix A for details of current ratings.

Working with 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
- disconnect all power and external cables before moving the unit
- do not work alone if potentially hazardous conditions exist
- 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

Preventing electrostatic discharge damage

Electrostatic discharge (ESD) damage can result in complete or intermittent failure. Some protection from ESD is built into the Ringswitch, but we advise you to follow these guidelines for preventing ESD damage:

- always use an ESD-preventative wrist or ankle strap and ensure that it makes good skin contact
- connect the equipment end of the strap to the metal case of the Ringswitch
- handle modules by the metal carrier and the edges of the module only; never touch components on the board or the connector pins
- place a removed module on an antistatic surface or in a static shielding bag. If the component will be returned to the factory, immediately place it in a static shielding bag
- avoid contact between the module and clothing. The wrist strap only protects the board from ESD voltages on the body; ESD voltages on clothing can still cause damage

Caution: For safety, periodically check the resistance value of the antistatic strap. The measurement should be between 1 and 10 megaohms.

Proper use of captive installation screws

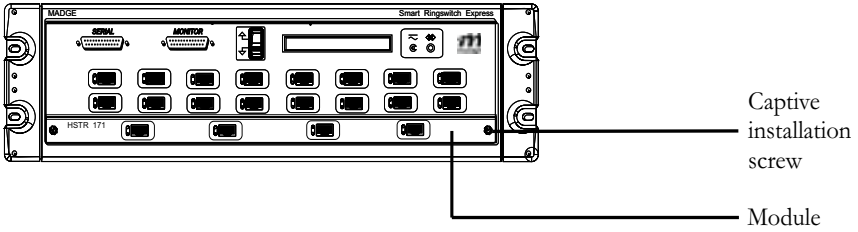
When installing modules into, or removing modules from, your Ringswitch, prevent damage to the chassis by operating the captive installation screws according to the following instructions.

1 Using a flat-blade screwdriver, turn the screw (clockwise if tightening, anti-clockwise if loosening) on the left side of the chassis of the Ringswitch for two full turns.

2 Turn the screw on the right side of the carrier for two full turns.

3 Repeat as necessary.

Table 0.1 Captive installation screws



Getting started with a Smart Ringswitch Plus Chassis

Install a Switch Module before connecting power to the Smart Ringswitch Plus Chassis. Only install the Switch Module into the uppermost slot (the Switch Module Slot). Connecting power to a Ringswitch Plus Chassis that has no Switch Module installed will damage the device.

Warning: Only install a Smart Ringswitch Plus Switch-3 Module in a Ringswitch Plus Chassis.

1 To avoid harming yourself or damaging your equipment, follow the guidelines in “Installation requirements” in the Introduction.
2 Unpack the unit. Keep the packaging in case you need to return the unit.
3 Check that your Ringswitch Plus Chassis has a Power Supply Unit (PSU) pre-installed and that you have a mains power cables available for each of the PSU’s in your Ringswitch Plus Chassis. If any parts are missing, contact Madge Technical Support. Make sure you have also received a Smart Ringswitch Plus Switch-3 Module, which must be ordered separately, as you cannot get started without one.
4 Mount the unit. (Either secure the Ringswitch Plus Chassis in a standard rack or place the Ringswitch Plus Chassis on a flat surface.) Leave a clearance of 40 mm around the Ringswitch Plus Chassis for heat dispersal.

5 Install the Switch Module. To do this:
   a Press the ejectors away from the center of the Switch Module.
   b Line up the Switch Module between the card guides in the Switch Module Slot and, holding the ejectors with both hands, push the Switch Module towards the back of the Ringswitch Plus Chassis.
   c When you are sure that the Switch Module is fully seated in the backplane, press the ejectors on the module towards the center of the module. If the ejectors do not move easily, gently push the module towards the rear of the Ringswitch Plus Chassis to make sure it is seated properly.
   d Tighten the captive installation screws.
6 Install a minimum of one Option Module. For information about installing an Option Module, see Chapter 4, “Getting started with an Option Module”.
7 Connect the power cable to the mains power socket on the rear of the Ringswitch Plus Chassis. If the Ringswitch Plus Chassis has one PSU installed, ensure you connect the power cable to the correct mains power socket, labeled PSU-01. The input voltage is auto-ranging; there is no voltage-selector switch.
8 Plug the cable into the AC outlet.

Note: To support a Secondary PSU, you will need a Secondary PSU (part number 57-77) and second power cable. For information about installing a Secondary PSU, see Chapter 5, “Getting started with a Secondary PSU”.

Warning: Do not touch the power supply when the power cord is connected. Line voltages are present within the power supply when the power cord is connected.

The Ringswitch Plus Chassis automatically runs a self-test routine to ensure that it is operating correctly. For information about the self-test program, refer to *Smart Ringswitch Family User Guide* (part number 100-291).

Getting started with the Smart Ringswitch Express Family

Note: Throughout this section, the term 'Smart Ringswitch unit' refers to both the Smart Ringswitch Express and the Smart Ringswitch Express Select.

1 To avoid harming yourself or damaging your equipment, follow the guidelines in "Installation requirements" in the Introduction.
2 Unpack the unit. Keep the packaging in case you need to return the unit.
3 Install the unit. (Either secure the Ringswitch Express unit in a standard rack using 4 off mounting screws fitted through the mounting hole at both ends of the front bezel or place the Ringswitch on a flat surface.) Leave a clearance of 40 mm around the Ringswitch Express unit for heat dispersal.

Warning: Ensure the rack is stable with the Ringswitch installed. Also note that the Ringswitch Express is designed to work in a maximum ambient temperature of 40C. Where the Ringswitch Express is being installed in a confined space or a rack then adaquate ventilation is required to ensure that the locally elevated temperature does not exceed 40C.

4 If you want to install an Option Module, see Chapter 4, Getting started with an Option Module.
5 Connect the power cable to the mains power socket on the rear of the Ringswitch Express unit. The input voltage is auto-ranging; you do not need to set a voltage-selector switch.
6 Plug a power cable into the AC outlet.

Warning: Ensure that the power supply is not overloaded by the installation of the Ringswitch Express. Do not touch the power supply when the power cord is connected. Line voltages are present within the power supply when the power cord is connected.

The Ringswitch Express unit automatically runs a self-test routine to ensure that it is operating correctly. For information about the self-test program, refer to *Smart Ringswitch Family User Guide* (part number 100-291).

Getting started with a replacement Switch Module

Warning: Only install a Smart Ringswitch Plus Switch-3 Module in a Smart Ringswitch Plus Chassis.

Installing a Switch Module

Warning: Before removing a Switch Module from the Ringswitch, always unplug the power cord. The Switch Module is not a "hot swap" product.

1 To avoid harming yourself or damaging your equipment, follow the guidelines in "Installation requirements" in the Introduction.
2 Disconnect the power cord from the Ringswitch.
3 Disconnect all existing cables from the Ringswitch.
4 Loosen and remove the captive installation screws that retain the Switch Module.
5 If the existing Switch Module is a Smart Ringswitch Plus Switch-3 Module, press the ejectors on the Switch Module away from the module and, holding the ejectors, carefully pull the Switch Module out of the slot. Otherwise, carefully pull the Switch Module out of the slot.
6 Place the removed Switch Module on an antistatic mat or foam pad, or place it in an antistatic bag if you will return it to the factory.

Caution: When you remove a Switch Module, always replace it with another Switch Module. Connecting power to a Ringswitch that has no Switch Module may damage the device.

7 Insert the new Switch Module. To do this:
   a Make sure the edges of the Switch Module are aligned correctly with the Switch Module Slot.
   b If your Switch Module is a Smart Ringswitch Plus Switch-3 Module, press the ejectors away from the center of the module.
   c Carefully push the Switch Module into the empty slot until the captive installation screws make contact with the metal case of the Ringswitch. Avoid touching the module or connector pins.
   d If your Switch Module is a Smart Ringswitch Plus Switch-3 Module, press the ejectors towards the center of the module.
   e Tighten the captive installation screws.
8 Reconnect the power cable to the power socket on the rear of the Ringswitch. The Ringswitch automatically runs the self-test program to ensure that it is operating correctly.

Warning: Do not touch the power supply when the power cord is connected. Line voltages are present within the power supply when the power cord is connected.

Checking the installation

Watch the LCD throughout the self-test to ensure that the replacement module passes all the tests.

For more information about the self-test program and the LCD displays, refer to *Smart Ringswitch Family User Guide* (part number: 100-291).

Getting started with an Option Module

Using the correct slot

Smart Ringswitch Plus Chassis

The Smart Ringswitch Plus Chassis has a total of seven slots. The uppermost slot of the Smart Ringswitch Plus Chassis Plus houses the Switch Module and is referred to as the Switch Module Slot. The remaining six slots support Option Modules and are referred to as Option Module Slots.

Smart Ringswitch Express

The Smart Ringswitch Express has one slot. This is an Option Module slot and supports Option Modules.

Smart Ringswitch Express Select

The Smart Ringswitch Express has three slots. These are Option Module slots and support Option Modules.

Option Module support

Table 4.1 is a matrix showing which Option Modules are supported in each slot of the Smart Ringswitch Plus Chassis, the Smart Ringswitch Express and the Smart Ringswitch Express Select.

Key

✔ This Option Module is fully supported in this slot

▲ This Option Module will give limited performance when installed in this slot

This Option Module is not supported in this slot

Table 4.1 Option Module support matrix

Option Modules	Unit	Smart Ringswitch Plus Chassis						Smart Ringswitch Express			Smart Ringswitch Express Select		
	Option Module Slot No.	1	2	3	4	5	6	1	2	3	1	2	3
	4-Port TR Copper Module	✔	✔	✔	✔	✔	✔			✔	✔	✔	✔
	4-Port TR Fiber Module	✔	✔	✔	✔	✔	✔			✔	✔	✔	✔
	Smart GroupSwitch Module	✔	✔	✔	✔	✔	✔			✔	✔	✔	✔
	8-Port TR Copper Module				✔	✔	✔			✔	✔	✔	✔
	8-Port TR Fiber Module				✔	✔	✔			✔	✔	✔	✔
	FDDI Module	▲	▲	▲	✔	✔	✔			✔	✔	✔	✔
	ATM 155-MMF/SMF Module	▲	▲	▲	✔	✔	✔			✔	✔	✔	✔
	2-Port HSTR Fiber Module	✔	✔	✔	✔	✔	✔			✔	✔	✔	✔
	4-Port HSTR Copper Module				✔	✔	✔			✔	✔	✔	✔
	TLS Module				✔	✔	✔			✔	✔	✔	✔
	2-Port Ethernet Module	✔	✔	✔	✔	✔	✔			✔	✔	✔	✔
	8-Port HSTR Copper Module				✔	✔	✔			✔	✔	✔	✔
	8-Port HSTR Fiber Module				✔	✔	✔			✔	✔	✔	✔
	Gigabit Module				✔	✔	✔			✔	✔	✔	✔

Installing an Option Module

Warning: Before installing an Option Module into the Ringswitch, always disconnect the power cord. Option Modules are not “hot swap” products.

Physically installing an Option Module

1 Read and adhere to the guidelines in “Installation requirements” in the Introduction.
2 Disconnect the power cord from the Ringswitch.
3 If you are replacing an existing module, remove any cables from the existing module.
4 Remove the captive installation screws that retain the existing module or blanking plate.
5 Carefully pull the existing module or blanking plate out of the slot. Place a 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 Take your new module and align the edges of the printed circuit board with the plastic guides.
7 Carefully push the module into the empty slot until the captive installation screws make contact with the metal case of the Ringswitch. Avoid touching the connector pins.
8 Tighten the captive installation screws and reconnect the power cable to the power socket on the rear of the Ringswitch. The Ringswitch automatically runs the self-test program to ensure that it is operating correctly.

Warning: Do not touch the power supply when the power cord is connected. Line voltages are present within the power supply when the power cord is connected.

Upgrading Ringswitch microcode

1 Insert the accompanying CD into your CD-ROM drive.
2 Run the SETUP.EXE program, which resides in the root directory.
3 Follow the instructions that the setup program gives you.
4 Run TrueView Ringswitch manager.
5 In TrueView, select “Upgrade code”. To do this, right-click on the red download button on the Ringwitch dialog box and select “Upgrade code”. This automatically downloads all the files that your Ringswitch needs for all installed modules. The Ringswitch will automatically re-boot as part of the upgrade process. When download is complete, you see the message “Upgrade Completed” in the Download Status dialog.

Note: The above procedure uses Multi-Download to upgrade all bootcode and microcode files together. For more information, see “Using Multi-Download to upgrade your Ringswitch” in the Introduction.

Checking the installation

Watch the LCD throughout the self-test to ensure that the module passes all the tests.

For more information about the self-test program and the LCD displays, refer to *Smart Ringswitch Family User Guide* (part number: 100-291).

Warning: Always install a module or blanking plate into an empty slot. Connecting the power cord to a Ringswitch with empty slots creates a fire hazard and violates the certification status of the product.

Getting started with a Secondary PSU

You can install a second power supply unit (PSU) into the Smart Ringswitch Plus Chassis to provide dual, load-sharing power supplies or to replace a faulty PSU.

The Smart Ringswitch Plus Chassis supports online insertion and removal of PSUs. This means you can install a Secondary PSU without powering off the Smart Ringswitch Plus Chassis. However, you must make sure the Smart Ringswitch Plus Chassis is occupied by one working PSU at all times. The Smart Ringswitch Plus Chassis cannot operate without a PSU.

Installing a Secondary PSU

1 To avoid harming yourself or damaging your equipment, follow the guidelines in “Installation requirements” in the Introduction.

2 Do one of the following:

- if you are replacing a faulty PSU, remove the faulty PSU. To do this, follow the instructions in “Removing a PSU” at the end of this chapter
- if you are installing a Secondary PSU, unscrew the blanking plate on the front of the Smart Ringswitch Plus Chassis and remove it

3 Prepare the PSU by pressing the ejectors away from the center of the module.

4 Supporting the underside of the PSU, align it with the slot.

5 Holding the ejectors with both hands, push the module towards the back of the unit.

6 When you are sure that the PSU is fully seated in the backplane, press the ejectors on the PSU towards the center of the module. If the ejectors do not move easily, gently push the PSU towards the rear of the

unit to make sure that the module is seated properly.

7 Using a flat-blade screwdriver, completely tighten the captive screw.

8 Connect the mains power cable to the Smart Ringswitch Plus Chassis to the AC mains socket labeled PSU-02 on the rear of the Smart Ringswitch Plus Chassis.

9 Connect the mains power cable to the AC outlet.

Removing a PSU

1 Disconnect the mains power cable corresponding to the PSU you want to remove. The mains power cable connects the Smart Ringswitch Plus Chassis 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 Smart Ringswitch Plus Chassis

2 Using a flat-blade screwdriver, completely loosen the captive screw above the left-hand ejector.

3 Press the ejectors on the existing PSU away from the module and, holding the ejectors with both hands, pull the PSU away from the Smart Ringswitch Plus Chassis.

4 Support the underside of the PSU with one hand, and remove it from the chassis.

5 Do one of the following:
   - — replace the removed PSU with a blanking plate
   - — install a replacement PSU. To do this, go to Step 3 in “Installing a Secondary PSU” in this chapter

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

Troubleshooting

Smart Ringswitch 8-Port TR Copper Module and 8-Port TR Fiber Module

Install an 8-Port TR Copper Module/8-Port TR Fiber Module in an available Option Module Slot for all eight ports to operate correctly. That is:

- In one of the bottom three Option Module Slots of a Smart Ringswitch Plus Chassis
- In the Option Module Slot of the Smart Ringswitch Express
- In any Option Module Slot of the Smart Ringswitch Express Select.

Smart Ringswitch 4-Port HSTR Copper Module and 8-Port HSTR Copper Module

Install a 4-Port HSTR Copper Module/8-Port HSTR Fiber Module in an available Option Module Slot for all eight ports to operate correctly. That is:

- In one of the bottom three Option Module Slots of a Smart Ringswitch Plus Chassis
- In the Option Module Slot of the Smart Ringswitch Express
- In any Option Module Slot of the Smart Ringswitch Express Select.

Four-port token-ring modules

All Option Module Slots support 4-port token-ring modules. When installing a 4-port TR module in a Smart Ringswitch Plus Chassis, always install into the first available empty Option Module Slot from the top down.

Smart GroupSwitch Module

All Option Module Slots support Smart GroupSwitch Modules. When installing Smart GroupSwitch Modules in a Smart Ringswitch Plus Chassis, always install into the first available empty Option Module Slot from the top downwards.

Smart Ringswitch FDDI Module

Install an FDDI Module into an available Option Module Slot. That is:

- In one of the bottom three Option Module Slots of a Smart Ringswitch Plus Chassis
- In the Option Module Slot of the Smart Ringswitch Express
- In any Option Module Slot of the Smart Ringswitch Express Select.

FDDI Modules installed into the bottom three Option Module Slots of the Smart Ringswitch Plus Chassis will benefit from the increased bandwidth provided by those slots. FDDI Modules installed into the Option Module Slot of the Smart Ringswitch Express provide full performance.

If you are installing the FDDI Module into the Smart Ringswitch Plus Chassis and you have microcode older than version 2.08, you must install the Smart Ringswitch FDDI Module into one of the top three Option Module Slots to be able to upgrade the microcode.

Smart Ringswitch ATM Module

Install an ATM Module into an available Option Module Slot. That is:

- In one of the bottom three Option Module Slots of a Smart Ringswitch Plus Chassis
- In the Option Module Slot of the Smart Ringswitch Express
- In any Option Module Slot of the Smart Ringswitch Express Select.

ATM Modules installed into the bottom three Option Module Slots of the Smart Ringswitch Plus Chassis will benefit from the increased bandwidth provided by those slots. ATM Modules installed into the Option Module Slot of the Smart Ringswitch Express provide full performance.

If you are installing the Smart Ringswitch ATM Module into the Smart Ringswitch Plus Chassis and you have microcode older than version 2.05, you must install the Smart Ringswitch ATM Module into one of the top three Option Module Slots to upgrade the microcode.

Smart Ringswitch TLS Module

Install a TLS Module into an available Option Module Slot. That is

- In one of the bottom three Option Module Slots of a Smart Ringswitch Plus Chassis
- In the Option Module Slot of the Smart Ringswitch Express
- In any Option Module Slot of the Smart Ringswitch Express Select.

You can only install one TLS Module in a Smart Ringswitch Plus Chassis.

The TLS Module is supported by Ringswitch Software Release 4.1 and later.

Smart Ringswitch 2-Port Ethernet Module

All Option Module Slots support 2-Port Ethernet Modules. When installing 2-Port Ethernet Modules in a Smart Ringswitch Plus Chassis, always install into the first available empty Option Module Slot from the top downwards.

The 2-Port Ethernet Module is supported by Ringswitch Software Release 4.2 and later.

Smart Ringswitch 2-Port HSTR Fiber Module

All Option Module Slots support 2-Port HSTR Fiber Modules. When installing 2-Port HSTR Fiber Modules in a Smart Ringswitch Plus Chassis, always install into the first available empty Option Module Slot from the top downwards.

Smart Ringswitch Gigabit Module

Install a Gigabit Module into an available Option Module Slot. That is

- In one of the bottom three Option Module Slots of a Smart Ringswitch Plus Chassis
- In the Option Module Slot of the Smart Ringswitch Express
- In any Option Module Slot of the Smart Ringswitch Express Select.

The Gigabit Module is supported by Ringswitch Software Release 4.3 and later.

Note: Madge is continually improving software and releasing updates for existing hardware. Please check our website at http://www.madge.com for the latest drivers and applications. Our support website may also assist your query: http://www.madge.com.

Current ratings

Use the information in this section to ensure that the sum of the current ratings for the modules you install does not exceed the maximum permissible rating for your Ringswitch.

Current ratings of the Ringswitch chassis

The following table displays the current ratings for the Ringswitch units.

Table 6.1 Current ratings for Ringswitch units

Model	Maximum +5V dc load	Maximum +12V dc load
Smart Ringswitch Plus Chassis	40.0A	1.5A
Smart Ringswitch Express	24.0A	1.0A
Smart Ringswitch Express Select	24.0A	1.0A

Current ratings of the Ringswitch modules

Refer to the following table to make sure that the sum of the current ratings for the modules you install does not exceed the maximum permissible rating for your Ringswitch.

To identify a module, refer to the identification number printed on the metal carrier or to the number on the printed circuit board. In the identification numbers shown in the following table, *xx* represents the revision number of the hardware.

Table 6.2 Current ratings for Ringswitch modules

Module	Circuit board i.d. number	Metal carrier i.d. number	Maximum +5V dc load	Maximum +12V dc load
Switch-3 Module	157-662-*xx* 157-957-*xx*	Switch 113 Switch 113b	8.0A 6.0A	0.1A 0.1A
Smart Ringswitch 4-Port TR Copper Module	157-040-*xx* 157-047-*xx*	TRP 120 TRP 121	4.2A 2.5A	0.2A 0.1A
Smart Ringswitch 4-Port TR Fiber Module	157-191-*xx*	TRP 130	3.8A	None
Smart Ringswitch 8-Port TR Copper Module	157-615-*xx* 157-935-*xx*	TRP 122 TRP 123	5.6A 2.5A	None 0.1A
Smart Ringswitch 8-Port TR Fiber Module	158-052-*xx*	TRP 131	3.1A	None
Smart Ringswitch FDDI Module	157-050-*xx*	FDDI 140	3.8A	None

Table 6.2 Current ratings for Ringswitch modules

Module	Circuit board i.d. number	Metal carrier i.d. number	Maximum +5V dc load	Maximum +12V dc load
Smart Ringswitch ATM-MMF Module	157-532-*xx*	ATM 160	5.25A	0.25A
Smart Ringswitch ATM-SMF Module	157-785-*xx*	ATM 161	5.25A	0.25A
Smart GroupSwitch Module	157-514-*xx*	Group 150	3.7A	None
Smart Ringswitch 4-Port HSTR Copper Module	157-959-*xx*	HSTR 171	4A	None
Smart Ringswitch 2-Port HSTR Fiber Module	157-982-*xx*	HSTR100.172	4A	None
Smart Ringswitch TLS Module	158-014-*xx*	TLS 180	5.25A	0.25A
Smart Ringswitch 8-Port HSTR Copper Module	158-041-*xx*	HSTR100.174	3.5A	None
Smart Ringswitch 8-Port HSTR Copper Module	158-041-*xx*	HSTR100.174a	3.5A	None
Smart Ringswitch 8-Port HSTR Fiber Module	158-042-*xx*	HSTR100.175	5.3A	None

Table 6.2 Current ratings for Ringswitch modules

Module	Circuit board i.d. number	Metal carrier i.d. number	Maximum +5V dc load	Maximum +12V dc load
Smart Ringswitch 2-Port Ethernet Module	158-045-*xx*	Ethernet 10/100 190	2.5A	0.25A
Smart Ringswitch Gigabit Module SX	158-067-*xx*	Gigabit 200 SX	2.5A	0.25A

Getting started with TrueView

System requirements for TrueView

The following are the minimum hardware and operating system requirements for TrueView Ringswitch Device Manager:

- Microsoft Windows 95/98, NT 4.0 or Microsoft Windows 2000 operating system
- Pentium (or Pentium II) 100MHz or equivalent (Pentium II 233 MHz for Windows 2000)
- 32Mb RAM (64Mb for Windows 2000)
- 20Mb available disk space
- CD- ROM drive or shared drive (for installation only)
- VGA video adapter and monitor

The following are the networking requirements for TrueView:

- Network interface card
- Network protocol stack (Winsock IPX, Winsock IP, or MSDLC on Windows NT4)

Installing the software from CD-ROM

The CD contains a setup program that enables you to install TrueView applications onto your computer. To run the setup program:

1 Insert the accompanying CD into your CD-ROM drive.
2 Run the SETUP.EXE program, which resides in the root directory.
3 Follow the instructions that the setup program gives you.

Note: The above procedure automatically updates any existing installation of TrueView.

Accessing TrueView online help

1 Run TrueView Ringswitch Manager.
2 Select Help (represented by a question mark icon).

Legal information and acknowledgments

Mandatory regulations

General requirements

The following sections outline mandatory regulations governing installation and operation of the following:

- Smart Ringswitch Plus Chassis
- Smart Ringswitch Express
- Smart Ringswitch Express Select
- Smart Ringswitch Plus Switch-3 Module
- Secondary PSU
- Smart Ringswitch 4-Port TR Copper Module
- Smart Ringswitch 4-Port TR Fiber Module
- Smart Ringswitch 8-Port TR Copper Module
- Smart Ringswitch 8-Port TR Fiber Module
- Smart GroupSwitch Module
- Smart Ringswitch 2-Port HSTR Fiber Module
- Smart Ringswitch 4-Port HSTR Copper Module
- Smart Ringswitch 8-Port HSTR Copper Module
- Smart Ringswitch 8-Port HSTR Fiber Module
- Smart Ringswitch TLS Module
- Smart Ringswitch ATM 155-MMF Module
- Smart Ringswitch ATM 155-SMF Module
- Smart Ringswitch FDDI Module
- Smart Ringswitch 2-Port Ethernet Module
- Smart Ringswitch Gigabit Module

Caution: USE OF CONTROLS OR ADJUSTMENTS OR PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Safety information

For full safety information refer to the *Madge Networks Safety Guidelines* (part number: 102-002).

European Directives

The CE mark indicates that all the above named products meet the requirements of the following European Directives:

- 89/336/EEC Electromagnetic Compatibility Directive
- 93/68/EEC CE Marking Directive

The Smart Ringswitch Chassis, the Smart Ringswitch Plus Chassis, and the Smart Ringswitch Express also meet the requirements of the following European Directive:

- 73/23/EEC Low Voltage Directive

Warning: These are Class A products. In a domestic environment these products may cause radio interference in which case the user may be required to take adequate measures.

Federal Communications Commission

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- the device may not cause harmful interference
- the device must accept any interference received, including interference that may cause undesired operation

This equipment has been tested and found to comply with the limits for Class A digital devices, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference to radio communications, when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, or if it is operated in a residential area, it may cause harmful interference to radio communications. In this case, users will be required to correct the interference at their own expense.

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.

Laser devices

The Smart Ringswitch Gigabit Module incorporates a Class 1 laser device. This module should only be installed and used according to the instruction manual.

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

Acknowledgments