Getting Started: Smart DeskStream Token Ring Switch

Software Release 1.6

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.

Contents

Introduction

This guide

This guide helps you to install, configure, and manage the Madge Smart DeskStream Token Ring Switch. It is a getting started guide and you should use it in conjunction with the Madge TrueView DeskStream Manager online help.

Product Registration

Please register your DeskStream online by going to: www.madge.com/register

Madge TrueView DeskStream Manager

The DeskStream is managed by the Madge TrueView management system which runs under Windows 95/98/NT4/2000. You may also manage the DeskStream by a telnet session or by connecting a serial cable and using the command line interface. For more information, see Chapter 4, Using the command line interface.

Physical characteristics of the DeskStream

The drawings below show the physical characteristics of the DeskStream. For information on the DeskStream ports and installable modules, see Chapter 3, DeskStream Ports and Modules.

Figure 1.1 Front view of the DeskStream

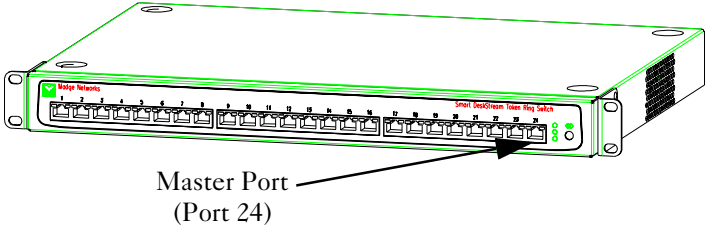
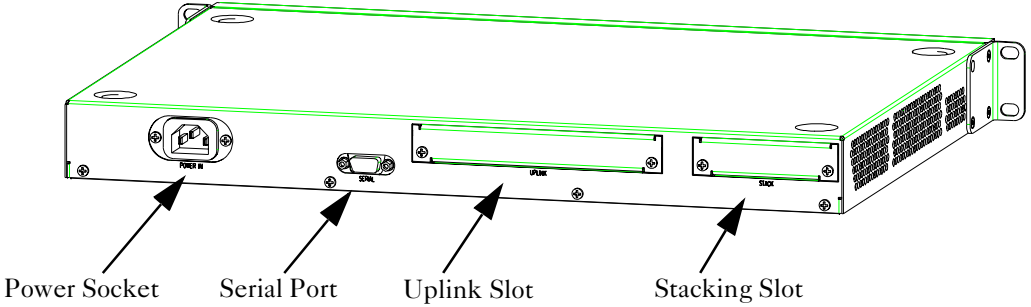


Figure 1.2 Rear view of the DeskStream



Installation

Caution: 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: 102- 002) before installing hardware. If you are in any doubt, contact your customer support representative.

Electrical considerations

This section provides important information about working with electrical equipment and preventing electrostatic discharge.

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-in to the Smart DeskStream, 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 Smart DeskStream
- 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.

Tools you will need

You will need the following tools:

- a flat blade screwdriver
- a Pozidriv screwdriver
- a screwdriver and four screws appropriate to your rack (if the DeskStream is to be rack mounted)

Unpacking the unit

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

Checking the inventory

Check you have received a complete DeskStream package before installing the unit.

If any items are missing or damaged, please contact Madge technical support services immediately.

The package should contain:

- one Smart DeskStream
- this guide
- an accessory kit (includes surface mounting feet, two rack mounting brackets, and fixings)
- a Smart DeskStream Software pack

Unpack the DeskStream from its protective packaging and inspect it to make sure that it was not damaged during shipment.

Mounting of the Smart DeskStream

Surface mounting

Attach the surface mounting feet to the underside of the DeskStream. If you are to stack the DeskStream, sit the feet in the recesses on the unit below.

Rack mounting

Attach the mounting brackets to the DeskStream and secure it to a standard 19inch rack either horizontally or vertically. If you attach the DeskStream to your rack vertically, ensure that the end that contains the cooling fan is positioned at the top of the unit. (The DeskStream is in the correct position if the reset button and LEDs are at the top of the unit.)

Note: Leave a clearance of 40mm around the vents in the DeskStream chassis for heat dispersal.

Powering-on the Smart DeskStream

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

Caution: Do not connect the Smart DeskStream to a telecommunications network.

To power on the DeskStream:

1 Make sure the power a the outlet socket is turned OFF.
2 Connect the power cable to the power outlet socket.
3 Then connect the power cable to the rear of the DeskStream.
4 Turn on the power at the outlet socket to power the switch.

Note: There is no power switch on the DeskStream.
The input-voltage is auto-ranging so you do not have to set a voltage-selector.

Diagnostics

When the DeskStream is powered-on, it will go through a diagnostics self-test. Pressing the reset button will restart the diagnostics self-test.

When you power-on the DeskStream the bottom LED (labelled Link 2) is green.

During the diagnostics self-test, the status LED flashes green and the port LEDs flash when tested. This is normal operation. When the DeskStream passes diagnostics, the status LED stays green and in normal use it remains green.

Note: If the DeskStream does not pass the diagnostics self-test, all three LEDs flash red. You must connect your DeskStream to a workstation via the serial connection. The status of the self-test is reported and a message indicating which test failed is shown every 15 seconds. For more information on using the serial connection see Chapter 4, Using the command line interface.

DeskStream LEDs during system startup

Table 2.1 DeskStream system status LEDs

LED state	System status
Green	Normal
Flashing Green	Diagnostic self test
Red	Error
Flashing Red	Warning

DeskStream port and option module LEDs and port mode

Table 2.2 DeskStream port and option module LEDs

LED state	Port in node mode	Port in concentrator mode	CAU fiber RI/RO port
Green	Open indicates that a node is inserted into a concentrator	Open indicates that a node is inserted in that port	Open
Red	Closed	N/A	Closed
No color	N/A	Ready indicates that the port is ready but there is nothing connected to it	N/A
Flashing Green	Disabled	Disabled	Disabled
Flashing Red	Error	Error	Error

Connecting cables to the Smart DeskStream

Follow these guidelines when connecting devices such as hubs, servers, personal computers, and workstations to the DeskStream:

- do not stretch cables. If you have to bunch cables together, support them to avoid strain
- do not route cables near sources of electromagnetic interference
- do not route cables in areas where they may be a hazard to people. If you have to route them in walkways use a cable cover to secure and protect them
- remember to label cables so that it will be easier to find them when you are troubleshooting a network problem

Connecting to a working token-ring network

- connect a PC or workstation to any of ports 1-23
- connect a token-ring bridge to any of ports 1-23
- connect a shared port on a hub to port 24
- connect ports 1-24 on the DeskStream to a token-ring switch

Reseting the DeskStream

To reset the DeskStream functions:

1 Depress the DeskStream reset button.
2 The top LED is green.
3 Keep the reset button depressed and the DeskStream will go through its reset all the menu items, and the middle and bottom LEDs will show a combination of colors.
4 To carry out a function (see Table 2.3), wait for the color combination of the middle and bottom LED you want, and release the reset button.

Table 2.3 Reset functions in the DeskStream

Function	Middle	Bottom
delete password (returns to default)	red	no color
erase configuration (returns to default)	no color	red
skip self-test (not recommended)	red	red
boot from ROM (returns to default)	green	red

Note: For all returns to default, the original factory setting is used.

DeskStream Ports and Modules

DeskStream Ports

The front ports on DeskStream have industry-standard shielded RJ-45 connectors. This allows the high density of 24 ports in a 1U high, 19" rack-compatible format.

To connect the DeskStream RJ-45 port to the DB-9 or IDC (IBM Data Connector) used on Shielded Twisted Pair (STP) cabling requires the use of a standard converter cable; *an impedance matcher, or media filter*, is not required. Sourcing these patch cables from local cabling suppliers/resellers allows exact cable lengths to be specified.

Impedance Matching

The RJ-45 ports offer impedance matching for both Unshielded Twisted Pair (UTP) and STP (example: IBM Type 1) cabling.

Dedicated Token Ring

Each DeskStream port supports the IEEE 802.5r Dedicated Token Ring (DTR) standard. This allows point-to-point switched Token Ring connections to operate in Full Duplex mode, offering an aggregate throughput of up to 32Mbps. While using DTR between active components, the cable distances supported are effectively doubled. Each port on the DeskStream will automatically negotiate DTR operation if the connected adapter or switch supports DTR. Conventional 4Mbps and 16Mbps connections are described as **Classic** in the following tables.

Unshielded Twisted Pair

The DeskStream RJ-45 ports support Category 5 UTP cabling. Cat 5 UTP is recommended, offering greatest cable distances and resilience to interference. Cat 3 cabling is especially susceptible to interference, and can even be affected by variations in temperature.

Category 5 UTP	4Mbps Classic	16Mbps Classic	16Mbps DTR
Max Node Count	256	250	2
Recommended Maximum Cable Length	150m	100m	200m
Madge Tested Cable Length	170m	120m	200m
Category 3 UTP	4Mbps Classic	16Mbps Classic	16Mbps DTR
Madge Tested Cable Length	170m	85m	150m

Shielded Twisted Pair (IBM Type 1)

The DeskStream RJ-45 ports support IBM Type 1 STP cabling with impedance of 150 Ohm.

IBM Type 1 STP	4 Mbps Classic	16 Mbps Classic	16 Mbps DTR
Max Node Count	256	250	2
Recommended Maximum Cable Length	375m	150m	300m
Madge Tested Cable Length	375m	175m	325m

Master Port Connectivity (Port 24)

Port 24 on the DeskStream supports connectivity to a shared port on a hub, allowing easy integration into the existing shared environment. The cable length for this connection will be determined by the shared hub.

Converter / Patch Cables

Where STP IBM Type 1 cabling is being used, there is a need to use a converter cable (patch cable) to connect between the STP cabling and the RJ-45 ports on the DeskStream. STP IBM Type 1 cabling has two connector types; the hermaphroditic IBM Data Connector (IDC) and a DB-9 pin connector. In the wiring patch panel and for hub/MAU attachment an IDC to IDC STP patch cable is commonly used. For adapter or node attachment, the STP cable is usually IDC to DB-9. For the connection from the wiring patch panel to the DeskStream, an IDC to Shielded RJ-45 patch cable is required. This patch cable must have a shielded cable and shielded connector, and support the STP impedance of 150 Ohms. This type of cable is generally available and most cabling suppliers will have standard part numbers for it. Two examples of suppliers are Anixter, Inc. (www.anixter.com) and South Hills Datacomm (Black Box) (www.blackbox.com).

DeskStream Modules

You can install optional modules to connect the DeskStream to your network using various cabling media. The modules are installed in slot labelled “uplink” on the back of the DeskStream.

Option modules currently available for the DeskStream:

- Smart DeskStream Token Ring (TR) Fiber Module (part number 58-34)
- Smart DeskStream HSTR Copper Module (part number 58-35)
- Smart DeskStream HSTR Fiber Module (part number 58-36)
- Smart DeskStream Ethernet Module (part number 58-39)
- Smart DeskStream ATM Module (part number 58-38)

Installing an option module

To install an option module:

1 Power-off the DeskStream.
2 Remove the uplink plate at the rear of the DeskStream.
3 Insert the option module until it is firmly seated in the uplink slot.

Caution: Make sure that you insert the module correctly. When the module is inserted correctly, its name is in the top left hand corner of the module.

4 Hand tighten the screws on the module.
5 Power-on the DeskStream.
6 Connect the appropriate cable for the installed module.
Verify that all cables are installed correctly into their respective connectors. Also check on the cabling route (so a cable will not be damaged or create a safety hazard).

Smart DeskStream Token Ring Fiber Module

The Smart DeskStream Token Ring (TR) Fiber Module provides the flexibility of fiber connectivity in Token Ring networks.

This module is fully compatible with the IEEE 802.5j standard. The module offers dual TR fiber ports, which operate independently, allowing load sharing in Source Routing environments.

The module ports can be used to connect to Fiber TR adapters, backbone switch fiber ports or for connecting DeskStreams together over fiber using DTR. In addition, the module has been designed to allow connection to RI/RO ports on CAUs.

Fiber Interface	IEEE 802.5j
Fiber Type	Multimode Fiber 62.5/125µm or 50/125µm
Wavelength	850 nm
Connectors	ST type
Cable Length	2km – 62.5/125µm 1km – 50/125µm

The TR Fiber module ports support the following modes:

- Concentrator or Node modes
  Node and concentrator port modes support operation at 4 or 16Mbps, and Full-Duplex mode.
- Ring-in/Ring-out mode
  Ring-in/Ring-out port mode enable you to connect to a Ring-in/Ring-out port in a CAU.

Note: Full-Duplex and auto ring-speed are not supported by Ring-in, Ring-out mode.

Note: When you connecting the fiber cable, make sure that the correct ends are connected to the transmit and receive connectors.

Fiber Optic Transceivers - Compatibility Testing

The Smart DeskStream TR Fiber Module has been tested for compatibility with third party Fiber to Copper transceivers for 4 and 16Mbps operation. The Cabletron TR-FOT2 converts between DB9 STP and multimode Fiber ST connectors. The use of external fiber optic transceivers provides greater cabling flexibility, although may introduce an additional point of network failure.

Connecting a TR Fiber Module to a CAU

Connect a CAU Ring-in/Ring-out port to the DeskStream port and configure this to be in "Ring-in/ Ring-out" mode.

Connecting a TR Fiber Module to a workstation / server

The port mode must be configured to "concentrator" mode.

Connecting a TR Fiber Module to another DeskStream or switch

The port mode on one device must be configured to "node" mode and the other device "concentrator" mode.

Smart DeskStream High Speed Token Ring Modules

To provide high bandwidth connections to backbone resources, the Smart DeskStream family includes two High Speed Token Ring (HSTR) 100Mbps modules. The Smart DeskStream HSTR Copper Module and HSTR Fiber Module both offer independent ports.

These modules can be connected to HSTR 100Mbps TR adapters, backbone switch ports, or back-to-back to connect DeskStreams together.

Fiber Interface	IEEE 802.5t 100Mbps HSTR	
Fiber Type	Multimode Fiber 62.5/125µm or 50/125µm	
Wavelength	1300 nm	
Connectors	Low Cost Fibre Optical Interface Connector (duplex SC Connector)	
Cable Length	2km – 62.5/125µm 1km – 50/125µm	
Copper Interface	IEEE 802.5t 100Mbps HSTR	
Connectors	Shielded RJ-45	
Cable Type	Cat5 UTP	IBM Type 1 STP
Recommended Maximum Cable Length	100m	100m
Madge Tested Cable Length	120m	175m

Note: The DeskStream HSTR Module ports support 100Mbps in concentrator or node mode and always operates in full-duplex mode.

Connecting HSTR Modules to a workstation / server

The port mode must be configured to “concentrator” mode.

Connecting HSTR Modules to another DeskStream or switch

The port mode on one device must be configured to “node” mode and the other device “concentrator” mode.

Smart DeskStream Ethernet Module

The DeskStream Ethernet Module provides a dual layer 2 connection between Token Ring and Ethernet networks. The Translation Switching solution provided in the DeskStream, allows for "any to any" connectivity permitting Ethernet and Token Ring end-stations to talk directly without the need for any special drivers in these end-stations. It is wired as an adapter/workstation.

Copper Interface	Ethernet/IEEE 802.3	
	10BASE-T and 100BASE-TX	10BASE-T
Cable Type	Cat5 UTP	Cat3 UTP
Connectors	Shielded RJ-45	Shielded RJ-45
Port Attributes	Auto-Negotiation enabled Full and Half Duplex	Auto-Negotiation disabled Full and Half Duplex
Port Speed	10Mbps or 100Mbps	10Mbps
Recommended Maximum Cable Length	100m	100m

Note: Currently, a DeskStream Stack will only support a single installed Ethernet Module.

Connecting an Ethernet Module to any MDI-X device

When you connect to a standard hub or standard switch configured and marked with "X" you must use straight-though Twisted Pair (TP) cable with RJ-45 connectors. The cables can be shielded or unshielded; we recommend that you use shielded.

A straight-though cable is one where the pins of one connector are connected to the same pins of the other connector.

Table 3.1 Schematic of a Straight-through Cable

DeskStream Ethernet Port			MDI-X device	
RJ-45 Pin	Function		RJ-45 Pin	Function
1	TxD+	◄——►	1	TxD+
2	TxD-	◄——►	2	TxD-
3	RxD+	◄——►	3	RxD+
6	RxD-	◄——►	6	RxD-
Pins 4, 5, 7 and 8 are not used				

Connecting an Ethernet Module to any MDI device

When you connect to an adapter/workstation or a Ringswitch or another DeskStream or any printer/scanner device then you must use a crossover cable.

Table 3.2 Schematic of a Crossover Cable

DeskStream Ethernet Port			MDI device	
RJ-45 Pin	Function		RJ-45 Pin	Function
1	TxD+		1	TxD+
2	TxD-		2	TxD-
3	RxD+		3	RxD+
6	RxD-		6	RxD-
Pins 4, 5, 7 and 8 are not used				

Smart DeskStream ATM Module

The ATM Module is an optional module used to extend the functionality of the DeskStream. It enables you to connect token-ring LANs to a high-speed ATM Network, thereby giving token-ring workstations access to ATM-based resources.

The ATM Module enables you to connect token-ring or Ethernet devices into an ATM network through a single physical interface. To do this the ATM Module supports eight LAN Emulation Clients (LECs). A LEC behaves like a token-ring or Ethernet port. The ATM Module assigns a virtual bridge port to each of these LECs to interface with the ATM network.

Connector redundancy

The ATM Module provides a dual redundant OC-3 STS-3c/STM-1 155Mbps connection supporting ATM Forum specified LAN Emulation. It is an MMF (Multi-Mode Fiber) module and has two female full duplex SC (Snap Connection) sockets.

Having two connectors provides a resilient link between the DeskStream and the network. One connector is the 'active' connector and carries the data. The second is a redundant 'standby' connector that is kept open and ready to take over carrying data in the event of the active connector failing.

Fiber Interface	ATM OC-3 STS-3c/STM-1 155Mbps
Fiber Type	Multimode Fiber 62.5/125µm or 50/125µm
Wavelength	1300 nm
Connectors	Low Cost Fibre Optical Interface Connector (duplex SC Connector)
Cable Length	2km – 62.5/125µm 1km – 50/125µm

Connecting ATM ports

The ATM Module is an ATM edge device running LAN Emulation (LANE) that switches token-ring encapsulated frames to and from the ATM network. The ATM Module can be connected to any ATM Switch whose port supports:

- 155Mbps network speed
- UNI (User Network Interface) 3.0 or 3.1
- SONET or SDH framing
- ILMI

The ATM Switch can communicate with other ATM devices running LANE v1, for example:

- ATM endstations running token-ring LANE
- ATM endstations running Ethernet LANE
- other edge devices running Ethernet LANE
- other edge devices running token-ring LANE
- other DeskStreams with ATM Modules

Integrating LANs into a high speed ATM network presents a range of possible applications. For example, token-ring based stations existing on multiple DeskStreams can be connected across an ATM network.

Note: Madge recommends that LANE components are located within an ATM switch.

Note: Currently, a DeskStream Stack will only support a single installed ATM Module.

Software requirements for installed module

We strongly recommend that you always update the software on your Smart DeskStream switches to the latest available release, and that you use the same software level on all switches that are connected as a stack. You can download software updates from the Madge.connect website at www.madge.com/connect, or order them from your Madge.connect reseller quoting part number 87-18.

The following table shows the *minimum* software level we advise according to the option module installed (if any).

Note: We recommend that you *do not* use any software release prior to Release 1.6.

Table 3.3 Software versions required for DeskStream modules

DeskStream Modules	Software Release	Microcode Version
Stacking Module	1.6	1.06.xx
HSTR Copper Module	1.6	1.06.xx
HSTR Fiber Module	1.6	1.06.xx
10/100 Mbps Ethernet Module	1.6	1.06.xx
16/4 Mbps TR Fiber Module	1.6	1.06.xx
ATM Module	1.6	1.06.xx
No option module installed	1.6	1.06.xx

Using the command line interface

There are two ways to use the command line interface:

— Telnet
— Serial interface

Telnet connection

Run the Telnet application and enter the IP address of the DeskStream you want to manage. You see the menu shown in Figure 4.1.

Note: If you use Telnet, the DeskStream must have an IP address.

Serial connection

The serial connection at the rear of the DeskStream enables you to communicate either locally or remotely with the DeskStream to configure, monitor and manage it.

- To use a local connection, connect a serial cable (9-way D-type) from the serial interface on the DeskStream to the serial interface on your workstation.
- To use a remote connection you will need a modem (baud rate 9600) to dial in to the DeskStream.

Note: In both cases, run a terminal emulator on your workstation. It must run at a baud rate of 9600, and preferably be ANSI standard.

The cable specification below is for a DB-9 pin to DB-25 pin terminal cable.

DB - 9 Pin	Signal	DB - 25 Pin	Signal
1	DCD	20	DTR
2	RXD	2	TXD
3	TXD	3	RXD
4	DTR	6, 8	DSR, DCD
5	GND	7	GND
6	DSR	20	DTR
7	RTS	5	CTS
8	CTS	4	RTS
9	N/A	9	N/A

How to use the Menu system

The DeskStream Terminal Configuration is a straightforward menu-driven configuration program. To select a menu item, enter its number and press Enter. If you need to change a configuration, press 0 to return to the previous menu, and choose a number again.

Figure 4.1 shows the opening menu screen from a Telnet session.

Figure 4.1 DeskStream Terminal Configuration from a Telnet session

```
DeskStream Terminal Configuration

 1. General
 2. Versions
 3. IP
 4. Port
 5. Port Group
 6. Bridge
 7. Spanning Tree
 8. Download
 9. Debug
10. Security
11. ATM
12. Quit

Enter selection number:
```

Overview of the top level menu commands

General

The General menu enables you to set system values, passwords, and reboot the DeskStream.

Versions

The Versions menu shows you version numbers of software and hardware.

IP

The IP menu enables you to set IP values on the DeskStream, and enable or disable BOOTP, DHCP, and RARP.

Port

The Port menu enables you to configure the ring speed and spanning tree values for a port, and view information about a port.

Port Group

The Port Group menu enables you to view and set Port Group information.

Bridge

The Bridge menu enables you to view and set Bridging information.

Spanning Tree

The Spanning Tree menu enables you to view and set spanning tree values.

Download

Use the Download menu to inform your DeskStream from what server it will download software. The Download menu enables you to configure, initiate, and download software.

Security

Use the Security menu to set passwords and show users of the DeskStream. You can also enable or disable port security.

Debug

The Debug menu enables you to view debugging information. Should you experience problems with your DeskStream, contact Madge Customer Support.

ATM

Use the ATM menu to view and configure ATM and ELAN information.

Quit

Quits the session.

More information on selected commands

Displaying the IP address

From the top level, enter 3 for IP, and then 1 for Show IP values. You see the current IP address of the DeskStream.

Setting the IP address

From the top level, enter 3 for IP, then 2 for Set IP Address. Enter the address and press Enter. From submenu 3 you can also set values for the Subnet Mask and Gateway.

Displaying the IPX address

From the top level, enter 5 for Port group, and then 1 for Show Port Group Info. The Management address is the IPX address.

Setting a password (Community String)

From the top level, enter 10 for Security, and then either 4 for a read password, or 5 for a write password.

Setting the Bridge Mode

The DeskStream supports Source Route and Source Route Transparent Bridging forwarding modes. Source Routing forwards frames using the Routing Information Field (RIF) segment of the frame. Source Route Transparent Bridging forwards frames that do not have a RIF by using the MAC address of the frame.

From the top level enter 6 and then set the Bridge Number and Global Hop limit, and the Forwarding mode.

Port Bridging

To connect a port on the DeskStream to a different ring number, you must enable Port Bridging. From the top level enter 4 and then 7 to enable port bridging. Enter the port number of the port you want to enable port bridging on.

By default the port auto learns the ring number.

To configure it manually press 3 for Configure Bridge Port and 1 for Set Bridge Port Ring Number. Enter the Port Number and then Ring Number.

Stacking the DeskStream

You may stack up to eight DeskStreams to provide up to 192 ports. To stack your DeskStream, you need an optional Stacking Module and cable (part number 58-37).

The TrueView DeskStream Manager will view these stack of DeskStreams as one DeskStream.

Inserting a Stacking Module

Caution: Never insert a Stacking Module into a powered-on DeskStream; the Stacking Module is not a “hot-swap” device.

1 Power-off the DeskStream.
2 Remove the Stacking blanking plate at the rear of the DeskStream.
3 Insert the Stacking Module until it is firmly seated in the slot.
4 Hand tighten the screws.
5 Power-on the DeskStream.

Stacking DeskStreams

To stack a number of DeskStreams:

1 Insert Stacking Modules into each DeskStream.

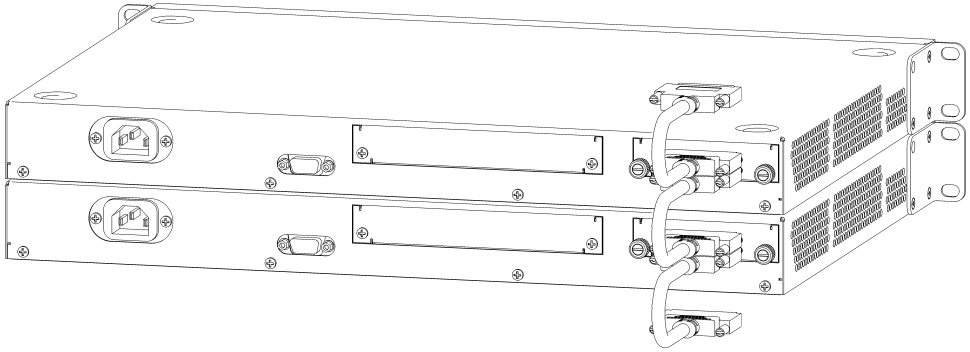
2 Stack your DeskStreams or secure them in a rack using the mounting brackets and fixings.

3 Connect the Stacking Cable to the nearest connector on each DeskStream. Be careful to fit the cable connectors correctly. Hand tighten the screws.

4 Connect the power cables and power-on.

Figure A.1 shows how to connect DeskStreams in a stack. Connect the top stacking cable slot on the lower DeskStream to the bottom stacking cable slot on the next DeskStream.

Figure A.1 Connecting DeskStreams in a stack



Adding a DeskStream to a working stack

To add a Deskstream to a working stack of DeskStreams:

1 Insert a Stacking Module into the DeskStream.
2 Place the DeskStream on top of the working stack.
3 Power-on the DeskStream.
4 Connect the Stacking Cable to the nearest connector on the DeskStream (see Figure A.1)
5 Reset any DeskStream in the stack to include the additional DeskStream.

Note: A working stack is defined as a stack of DeskStreams that have completed self-test.

Note: You can add a DeskStream to a working DeskStream stack; however, you must reboot the stack to integrate the additional DeskStream.

Downloading microcode to a working stack

The TrueView DeskStream Manager sees a stack of DeskStreams as one DeskStream. Therefore downloading the latest microcode to a stack will update the microcode on all of the DeskStreams in the stack. For information on downloading microcode, see TrueView DeskStream Manager online help.

Additional stacking information

- a DeskStream stack is considered a single entity by network management and therefore uses a single IP address
- you may combine two stacks by connecting the top DeskStream of the first stack to the bottom DeskStream of the second stack. Reset any DeskStream in either of the stacks and they will reconfigure as one stack
- if a DeskStream is to be removed from a stack, first power-off the DeskStream and then disconnect the stacking cables. Re-cable the stack and it will reset
- if a stack of DeskStreams suffers a power failure, it will reset itself when the power returns
- if a DeskStream within a stack suffers a permanent power failure, the stack will reset and reconfigure itself around this DeskStream. If the failing DeskStream is in the middle of the stack, two new stacks will form; if the failing DeskStream is located at the top or bottom the stack will have one less DeskStream

Note: Currently, a DeskStream Stack will only support a single installed Ethernet Module.

Note: Currently, a DeskStream Stack will only support a single installed ATM Module.

Product details

Smart DeskStream Physical Specifications

Table B.1 Smart DeskStream Physical Specifications

Network Type	IEEE 802.5 Token Ring 4, 16, 32Mbps Classic/DTR
Media Interface	Shielded RJ-45 supporting 150Ohm STP and 100Ohm UTP cabling
Number of Ports	23 slave (concentrator) ports, supporting direct connections to PCs routers, bridges, switches. 1 Master/slave (node/concentrator) port, supports connection to shared ring ports. Up to 192 ports by stacking eight DeskStreams Auto-speed sensing (Ring speed can be set manually on a per port basis)
Option Slots	1 stacking module slot, 1 option module slot; Slots situated on rear of unit.
Serial Interface	Console/Modem connectivity, EIA/TIA RS232; DB9
Mounting	1U, 19-inch rack-compatible
Dimensions	445mm by 44mm by 325mm
Weight	4.2 Kg
Warranty	1 year

Smart DeskStream Power Specifications

Table B.2 Smart DeskStream Power Specifications

Supply	100-240V AC auto-ranging
Frequency	47-63 Hz
Thermal Dissipation	110W max, 375.3 BTU/hr
AC Current Rating	2A @ 115V; 1A @ 230V

Smart DeskStream Environmental Specifications

Table B.3 Smart DeskStream Environmental Specifications

Operating temperatures	10-40 degrees C
Non-operating temperatures	-25 to 60 degrees C
Operating humidity	10-90% RH non-condensing

Smart DeskStream EMC / Safety Information

Table B.4 Smart DeskStream EMC/Safety Information

EMC	FCC Class A, EN55022 Class A EN50082-1, VCCI Class A (Cat.5 UTP)
Safety	UL1950, C UL to CSA C22.2 No.950 EN60950, IEC 950
CE Mark	Yes
Year-2000 Compliant	Yes

Smart DeskStream Module Current Ratings

Check the following table to make sure that the sum of the current ratings for the modules you install in your DeskStream does not exceed the maximum permissible value of 2.2A.

Table B.5 Smart DeskStream Module Current Ratings

Option Module	1.7A
Stacking Module	0.5A

Smart DeskStream Features

Table B.6 Smart DeskStream Features

Switching	Cut-through between ports
Forwarding	Source Route Switching Automatic ring number learning (ISO 8802-5/Amm.1 Annex K)
Microcode updates	TFTP over IP or IPX
MIB Support	RFC 1213, 1573, 1748, 1493 Dedicated Token Ring (DTR) interface/concentrator Madge stack MIB, Madge box MIB, Madge DeskStream MIB
Spanning Tree	IEEE Spanning Tree, IBM Spanning Tree
Buffers	2Mbytes of Central Buffer Memory
Network Management	Command line interface over serial or telnet session SNMP over IP and IPX Separate read and write community strings (passwords) DeskStream Manager for Windows 95/98/NT4/2000 DeskStream Manager for UNIX also available

Smart DeskStream Cabling Lengths

Check the following table for recommended maximum cabling lengths.

Table B.7 Smart DeskStream Cabling Lengths

UTP	100 meters
STP	150 meters
UTP with DTR connections	200 meters
STP with DTR connections	300 meters

Smart DeskStream Serial Port Connectors

Table B.8 Smart DeskStream Serial Port Connectors

Pin	Signal	I/O	Definition
1	DCD	I	Data carrier detect
2	RXD	I	Data receive
3	TXD	O	Data transmit
4	DTR	O	Data terminal ready
5	GND	N/A	Signal ground
6	DSR	I	Data set ready
7	RTS	O	Request to send
8	CTS	I	Clear to send
9	N/A	N/A	N/A

Legal information and acknowledgments

Mandatory regulations

General requirements

The sections that follow outline the mandatory regulations governing the installation and operation of the following products from Madge Networks:

- Smart DeskStream Token Ring Switch
- TR Fiber Module
- HSTR Module
- Ethernet Module
- ATM Module
- Stacking Module

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
- 73/23/EEC Low Voltage 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.

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.

Caution: Use of controls or adjustments or procedures other than those specified herein may result in hazardous radiation exposure.

Laser devices

If the product contains a laser device, the following statement applies:

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

Acknowledgments

Release date: December 2000