Dual DSX-1

Network Interface Card
Getting Started Guide

Part No. 1.024.1162-01

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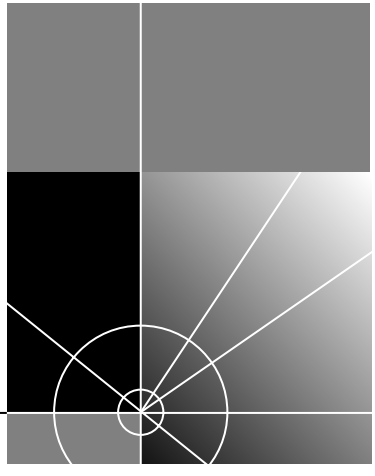

http://www.3com.com/

Part No. 1.024.1162-01

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1 OVERVIEW

This chapter provides an overview of:

- Contacting 3Com
- Document conventions
- Product description
- Product compatibility

Contacting 3Com

Call the appropriate toll free number listed below for technical support.

For European countries that do not have a toll free number listed, call +31 30 602 9900.

Country	Toll Free Number	Country	Toll Free Number
Austria	06 607468	**Netherlands**	0800 0227788
Belgium	0800 71429	**Norway**	800 11376
Canada	1800 2318770	**Poland**	00800 3111206
Denmark	800 17309	**Portugal**	0800 831416
Finland	0800 113153	**South Africa**	0800 995014
France	0800 917959	**Spain**	900 983125
Germany	0800 1821502	**Sweden**	020 795482
Hungary	00800 12813	**Switzerland**	0800 553072
Ireland	1800 553117	**UK**	0800 966197
Israel	0800 9453794	**United States**	1800 2318770
Italy	1678 79489	***All Other Locations (Outside Europe)***	1847 7976600

Refer to the Total Control Hub Documentation CD-ROM for more information regarding product warranty.

For information about Customer Service, including support, training, contracts, and documentation, visit our website at ***http://totalservice.3com.com***

Document Conventions

These tables list conventions used throughout this guide.

Icon	Notice Type	Description
	Information note	Information that contains important features or instructions.
	Caution	Information to alert you to potential damage to a program, system, or device.
	Warning	Information to alert you to potential personal injury or fatality. May also alert you to potential electrical hazard.
	ESD	Information to alert you to take proper grounding precautions before handling a product.

Convention	Description
Text represented as a `screen display`	`This typeface` represents displays that appear on your terminal screen, for example: `Netlogin:`
Text represented as **`commands`**	**`This typeface`** represents commands that you enter for example: **`setenv TCMHOME directory`** *This guide always gives the full form of a command in uppercase and lowercase letters. However, you can abbreviate commands by entering only the uppercase letters and the appropriate value. Commands are not case-sensitive.*
Text represented as **menu** or **sub-menu names**.	**This typeface** represents all menu and sub-menu names within procedures, for example: On the **File** menu, click **New**.

Product Description

The Dual DSX-1 Network Interface Card (NIC), also known as the Short Haul NIC, eliminates the need for a channel service unit (CSU). Eliminating the transceiver from the connection reduces the power level on the cable, which provides a more reliable signal over shorter cable lengths. This NIC supports cable lengths from 0–655 feet.

Product Compatibility

The Dual DSX-1 NIC is compatible with the following Network Application Cards:

- Dual Channelized T1 (386)
- Dual T1/PRI

2 INSTALLATION

This chapter contains Dual DSX-1 Network Interface Card (NIC) installation information.

Installation Tools

To install this NIC in the Total Control chassis, you need a #2 Phillips and flat-head screwdriver.

Installation Procedure

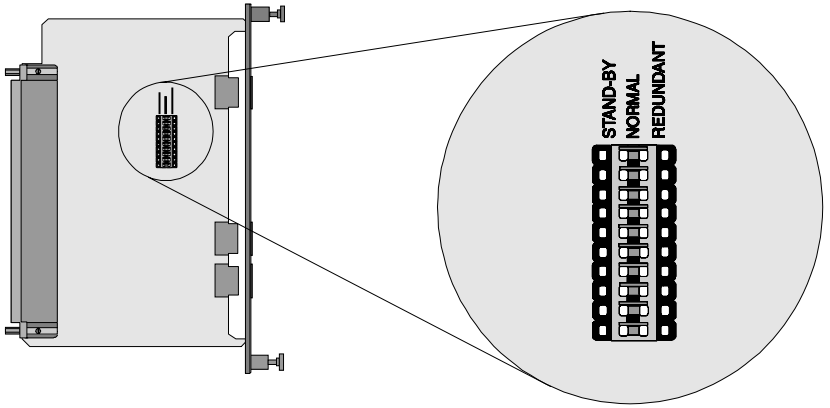
To install this NIC:

ESD: *To reduce the risk of electrostatic discharge (ESD), take proper grounding precautions before handling the NIC.*

Install the NIC with or without power applied to the chassis.

1 Configure the NIC via the jumpers.

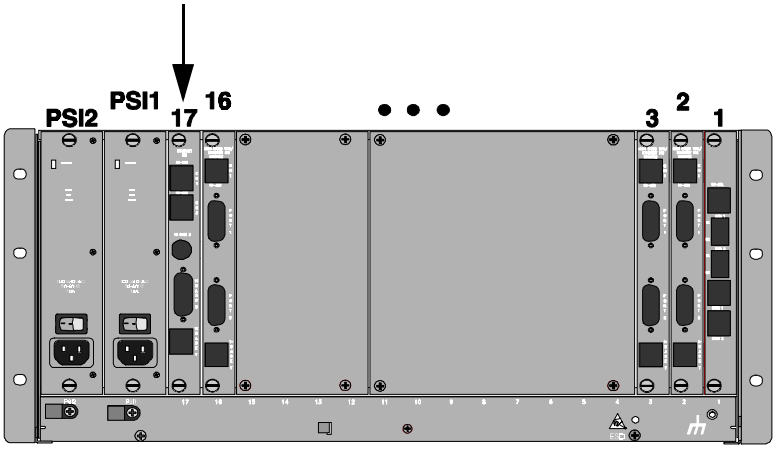
For proper operation, confirm that the 10-position jumper is at NORMAL.



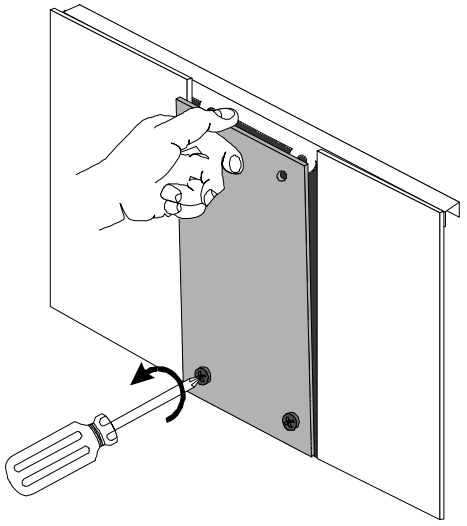
2 Select a slot at the rear of the Total Control chassis for installing the NIC.

Install this NIC in slot(s): 1–17

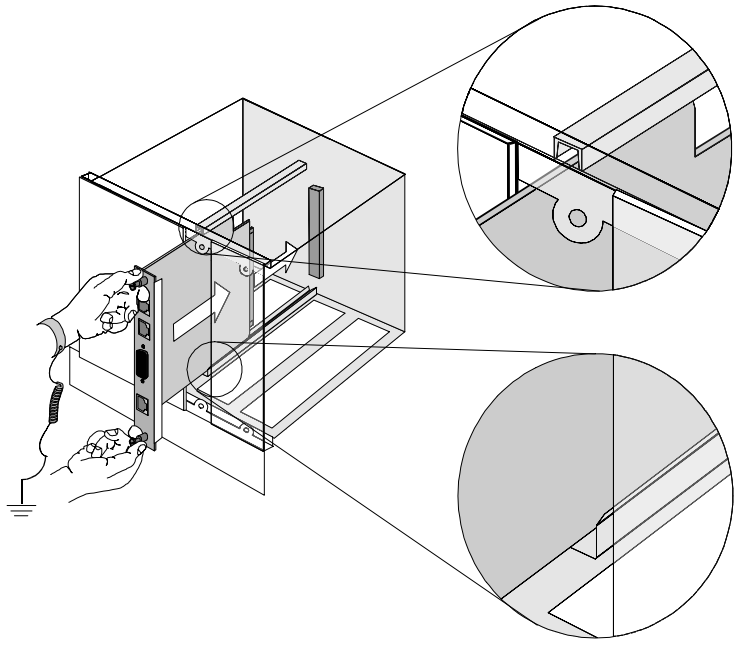
For managed chassis, slot 17 is reserved for the Network Management Card (NMC) NIC.



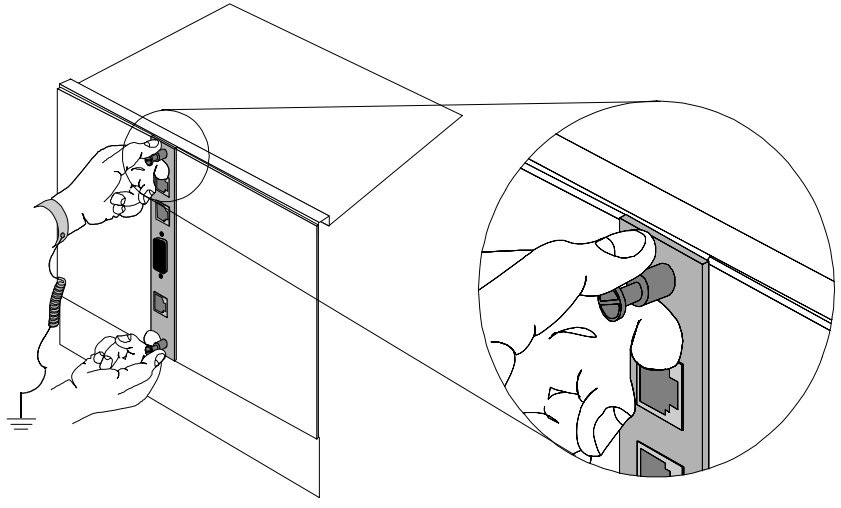
3 Use a #2 Phillips screwdriver to remove the safety panel covering this slot.



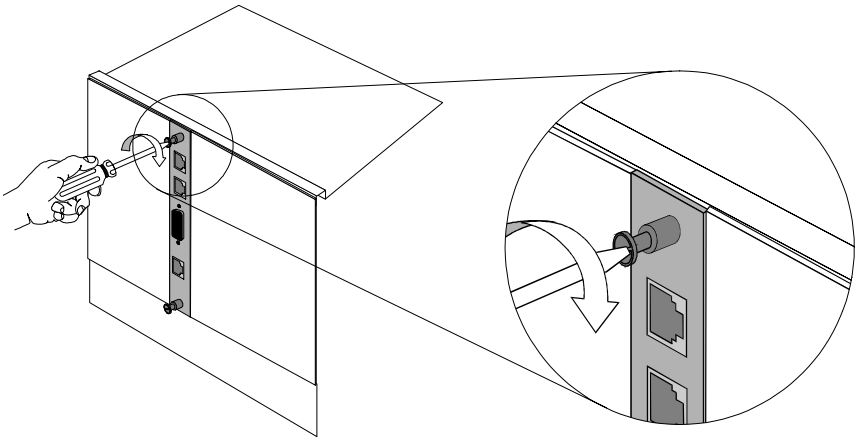
4 Insert the NIC between the slot's upper and lower card guides.



5 Slide the NIC into the chassis, until the front of the NIC is flush with the chassis.



6 Use a flat-head screwdriver to tighten the screws on the front panel.



7 Cover any unused chassis slots with safety panels.

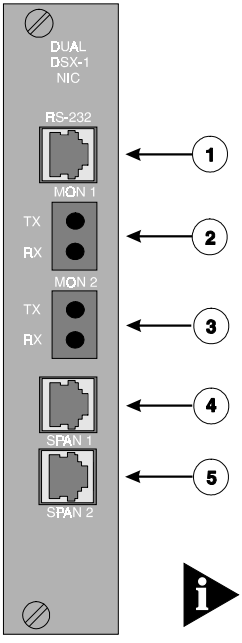
8 Install the Network Application Card (NAC) corresponding to this NIC. Refer to the NAC's Getting Started Guide for more information.

3 NETWORK INTERFACE CARD CABLING

This chapter provides information about the physical interfaces of the Dual DSX-1 Network Interface Card (NIC), instructions for accessing the corresponding Network Application Card (NAC) through the user interface (UI), and options for configuring the software.

Physical Interfaces

The Dual DSX-1 NIC has the following physical interfaces:

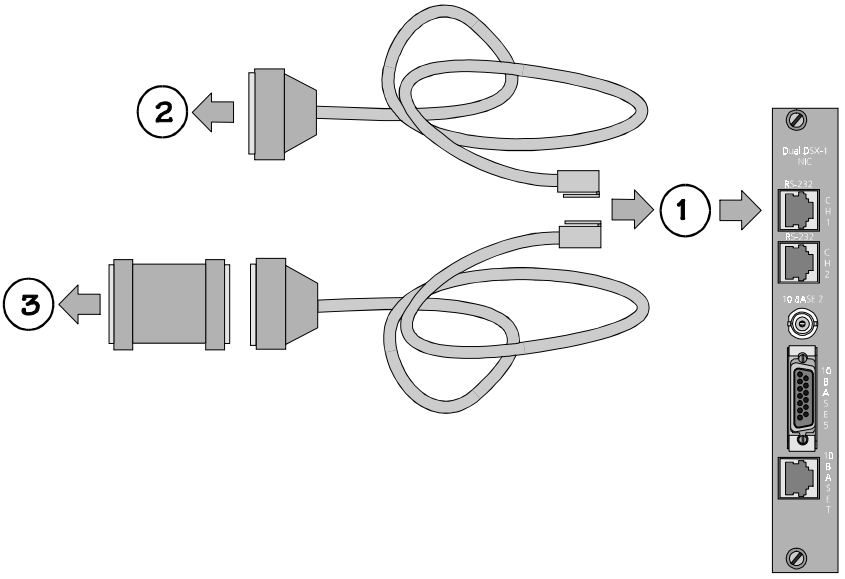


Callout Number	Interface Description
1	**RS-232:** RJ-45 RS-232 port ■ Connect to this port to access the corresponding NAC's UI console.
2	**MON 1:** Bantam Jack with two ports (TX and RX) for monitoring equipment. This interface monitors Span 1.
3	**MON 2:** Bantam Jack with two ports (TX and RX) for monitoring equipment. This interface monitors Span 2.
4	**Span 1:** 8-pin RJ-48C Span Line 1 Interface
5	**Span 2:** 8-pin RJ-48C Span Line 2 Interface

Confirm that the monitoring equipment to be connected is in monitoring (non-intrusive) mode. Passive coupling attenuates the signal from the monitoring jacks making it difficult for some monitoring equipment to sense.

Accessing the User Interface

To access the UI of the corresponding NAC, connect the following cables to the NIC's console port.



Callout Number	Description
1	RJ-45 connector to NIC's console port
2	DB-25 male connector to modem for remote operations
3	DB-25 female-to-female null modem adapter to PC or terminal COM port

Configuring Software

Configure the NIC for the necessary cable length (0–655 feet) through:

- The NIC's UI port
- 3Com Total Control Manager/Simple Network Management Protocol (SNMP) software
- A generic Management Information Base (MIB) manager software application

Configuring the User Interface Port

Connect to the UI port. Refer to the section *Accessing the User Interface*. Access the UI console through a terminal emulation program.

Difficulties in connecting are usually the result of mis-matched baud rates between the NAC and the terminal emulator.

The Dual DSX-1 NIC's configurable parameter is accessed differently depending if it is installed behind the Channelized T1-386 or the T1/PRI NAC.

Channelized T1-386 NAC

1 From the Main Menu, select option 5 <or 7>, *T1 Span Line 1 <2> Configuration*.

This screen displays:

```
T1 Span Line 1 Configuration                Current Setting

 1 T1 Span Line 1 Framing Mode                SF
 2 T1 Span Line 1 Line Coding                 AMI
 3 T1 Span Line 1 Remotely Initiated Loopback Ignore
 4 T1 Span Line 1 Jitter Attenuation          Receiver
 5 T1 Span Line 1 Automatic Busy-out          Disabled
 6 T1 Span Line 1 Fractional T1 Byte Pattern  FE Hex
 7 T1 Span Line 1 Short Haul NIC Line Length  0-133

 (NOTE: Changing configuration parameters may affect calls in
progress.)

 Enter menu selection and press Return or press Esc to exit.
 Menu Selection (1-7):
```

2 Select option 7.

This screen displays:

```
T1 Span Line 1 Short Haul NIC Line Length

1 0-133 feet
2 134-266 feet
3 267-399 feet
4 400-533 feet
5 534-655 feet

Enter menu selection and press Return or press Esc to exit.

Menu Selection (1-5):
```

3 Type the necessary length and then press **Enter** to accept the value. The default is 0–133 feet.

4 Return to the Main Menu.

5 From the Main Menu, select option 3, *T1 Card Configuration*.

This screen displays:

```
T1 Card Configuration                    Current Setting

1 Save current Configuration to NVRAM
2 Restore NVRAM Configuration
3 Restore Default Configuration
4 Timing Source Priority Assignment      T1-1=1 T1-2=2 INT=0
BUS=0

(NOTE: Changing configuration parameters may effect calls in
progress.)

Enter menu selection and press Return or press Esc to exit.
Menu Selection (1-4):
```

6 Select option 1 to save your configuration to NVRAM and then press **Enter**.

The T1 Span Line Jitter Attenuation parameter found under option 5 <and 7> of the Main Menu (T1 Span Line 1 <2> Configuration), is permanently enabled on the receive side.

T1/PRI NAC

1 From the Main Menu, select option 5 <or 6>, *Span Line 1 <2> Configuration*.

This screen displays:

```
Span Line 1 Configuration                    Current Setting

 1  Framing Mode                             ESF
 2  Line Coding                              B8ZS
 3  Remotely Initiated Loopback Ignore
 4  Jitter Attenuation                       Receiver
 5  Switch Type (Boot time)
          Config=5ESS(AT&T)Act.=5ESS(AT&T)
 6  Idle Byte Sent to TELCO                  FE Hex
 7  DS0 to Modem Slot / Chan Mapping
 8  Signaling Channel Config (Boot time)                    Config=D-
channel Act.=D-channel
 9 Interface ID                             0
 10 Span Level Call Type Blocking           No Call Blocked
 11 Span Level Cause Codes
 12 DS0 Level Call Type Blocking
 13 DS0 Level Service State
 14 Short Haul NIC Line Length  0-133

 (NOTE: Changing configuration parameters may effect calls in
progress.)

 Enter menu selection and press Return or press Esc to exit.
 Menu Selection (1-14):
```

2 Select option 14.

This screen appears:

```
T1 Span Line 1 Short Haul NIC Line Length

1 0-133 feet
2 134-266 feet
3 267-399 feet
4 400-533 feet
5 534-655 feet

Enter menu selection and press Return or press Esc to exit.

Menu Selection (1-5):
```

3 Type the necessary length and then press **Enter** to accept the value. The default is 0–133 feet.

4 Return to the Main Menu.

5 From the Main Menu, select option 3, *Card Configuration*.

This screen displays:

```
Card Configuration                Current Setting

 1 Save current Configuration to NVRAM
 2 Restore NVRAM Configuration
 3 Restore Default Configuration
 4 Timing Source Priority Assignment        T1-1=1 T1-2=2 INT=0
BUS=0

(NOTE: Changing configuration parameters may effect calls in
progress.)

 Enter menu selection and press Return or press Esc to exit.
 Menu Selection (1-4):
```

6 Select option 1 to save your configuration to NVRAM and then press **Enter**.

The Span Line Jitter Attenuation parameter found under option 5 <and 6> of the Main Menu (Span Line 1 <2> Configuration), is permanently enabled on the receive side.

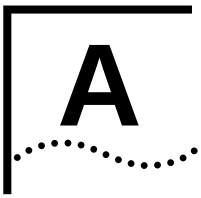
Configuring Total Control Manager Software

Use the *Programmed Settings* option Short Haul NIC group in Total Control Manager to configure the NIC at the NAC's channel level.

Configuring MIB Manager Software

Use the following MIB object, found in the UDS1 MIB, to configure the NIC.

MIB Object:	uds1ShrtHaulDist
Description:	Various distance ranges supported by the Short Haul NIC
Settings:	notApplicable
	len0thru133Ft
	len133thru266Ft
	len266thru399Ft
	len399thru533Ft
	len533thru655Ft
Default:	len0thru133Ft



TECHNICAL SPECIFICATIONS

Certification

Regulatory Compliance Statements

United States

FCC Part 15 Compliance Statement

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.

Interface Specifications

- 2 RJ-48C connectors for T1 Network Interface Card (NIC) to terminate T1 span lines
- 2 Bantam Monitor jacks for T1 NIC to monitor network signals
- RS-232D modular 8 connector for configuration and software download with a PC, terminal, or modem
- 180-pin DIN connector to chassis midplane
- Menu-driven operator interface via the RS-232 port

Dual T1/PRI

DSO's Supported:	Up to 48 DSO's
Framing:	D4 or Extended Super Frame (ESF)
Line Coding:	■ Binary Eight Zero Code Suppression (B8ZS) ■ Alternate Mark Inversion (AMI) ■ Zero Code Suppression (ZCS)
Integral CSU	■ Line Rate: T1 (1.544 Mbps) ■ Input Signal: DS1 to -34dB typical per AT&T Publication 64211 ■ Output Signal: DSX-1 with 5 pulse equalization settings for T1 Short Haul applications ■ Configuration: Stored in NVRAM
Timing Source:	Loop timing source from either span line
Fallback:	Automatic fallback to alternate timing sources
Signaling:	Address signaling (DNIS/ANI)

Operating Environment

Temperature:	0 to 40° C, 32 to 104° F
Relative Humidity:	0 to 95%, Non-condensing

Channelized T1-386

DSO's Supported:	Up to 48 DSO's
Framing:	D4 or ESF
Line Coding:	■ B8ZS ■ AMI ■ ZCS
Integral CSU	■ Line Rate: T1 (1.544 Mbps) ■ Input Signal: DS1 to -34dB typical per AT&T Publication 64211 ■ Output Signal: DSX-1 with 5 pulse equalization settings for T1 Short Haul applications ■ Configuration: Stored in NVRAM
Timing Source:	Loop timing source from either span line
Fallback:	Automatic fallback to alternate timing sources
Signaling:	E&M Type II
Supervision:	Wink Start and Answer
Start:	Immediate Start/Ground Start/Loop Start
Address Signaling:	DNIS/ANI

Operating Environment

Temperature:	0 to 40° C, 32 to 104° F
Relative Humidity:	0 to 95%, Non-condensing

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