HiPer DSP

Network Application Card
Getting Started Guide

Part No. 1.024.1325-01

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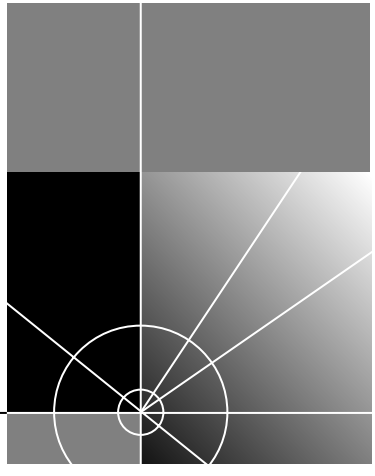

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Part No. 1.024.1325-01

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CONTENTS

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 HiPer Digital Signal Processor (DSP) Network Application Card (NAC) comes in two varieties: one that supports T1 applications such as Channelized T1 and T1/PRI, and one that supports E1 applications such as E1/PRI and E1/CAS. The HiPer DSP for T1 applications contains 24 modems while the E1 version has 30.

Together with the HiPer DSP T1/E1 Network Interface Card (NIC), the HiPer DSP NAC terminates an entire T1 or E1 span, which greatly increases the channel capacity of the Total Control chassis.

Product Compatibility

The HiPer DSP NAC is compatible with the HiPer DSP T1/E1 NIC.

2 INSTALLATION

This chapter contains HiPer Digital Signal Network (DSP) Network Application Card (NAC) installation information.

Installation Tools

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

Installation Procedure

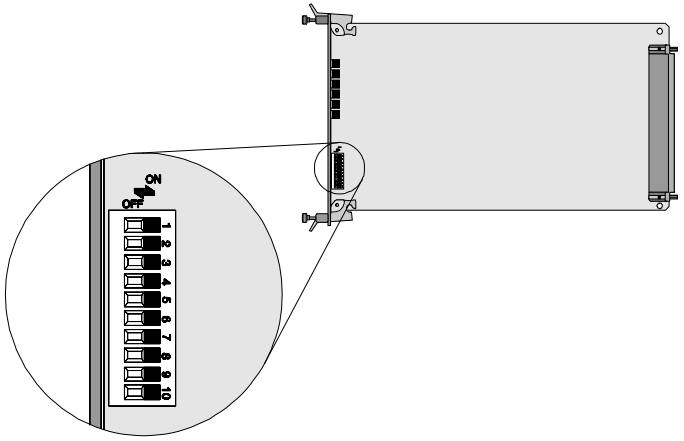
To install this NAC:

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

1 Install the Network Interface Card (NIC) corresponding to this NAC.

Refer to the NIC's Getting Started Guide for more information.

2 Configure the NAC via the DIP switches.



DIP Switch	Applications	Function		
1,2	All	T1 or E1 NIC CH1 Port Rate		
		DIP1	**DIP2**	**SELECTS**
		OFF	OFF	9600 bps
		OFF	ON	19200 bps
		ON	OFF	38400 bps
		ON	ON	Reserved
3	CH T1	**OFF**: Hardware Flow Control disabled		
		ON: Hardware Flow Control enabled		
	T1/PRI	Reserved		
	E1/PRI	Reserved		
	E1/CAS	Reserved		
	E1/DASS2	Reserved		
4	T1/PRI E1/PRI	**OFF**: User Interface console password protection disabled		
	E1/DASS2	**ON**: User Interface console password protection enabled		
5–10		Reserved		

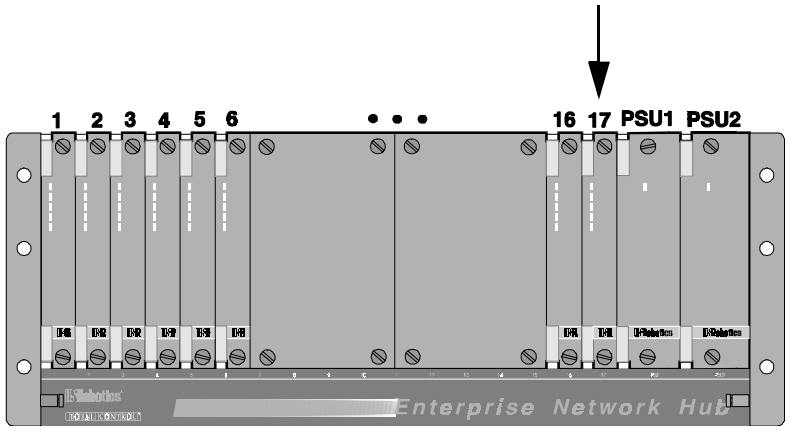
For proper operation, do not change DIP switch settings marked as reserved.

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

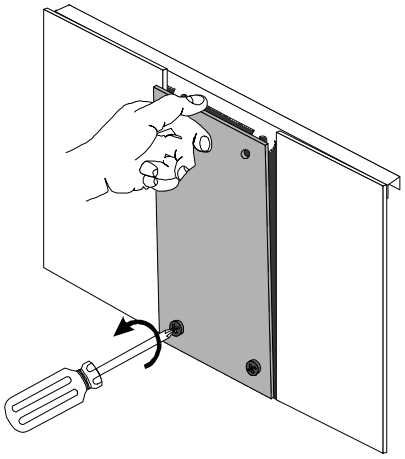
3 Select a slot at the front of the Total Control chassis for installing the NAC.

Install this NAC in slot(s): 1–17

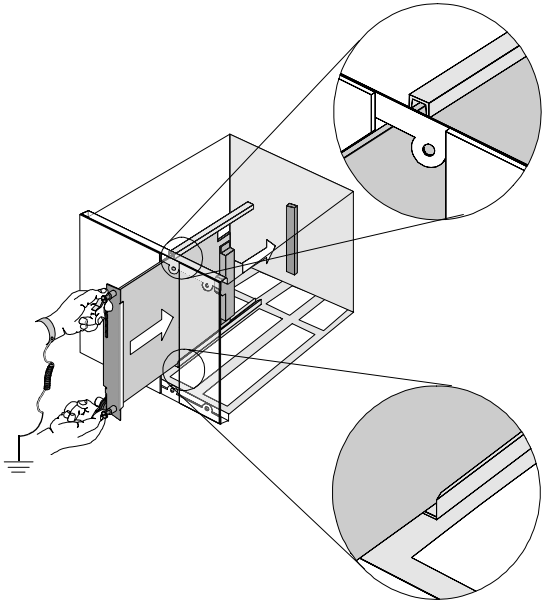
For managed chassis, slot 17 is reserved for the Network Management Card (NMC) NAC.



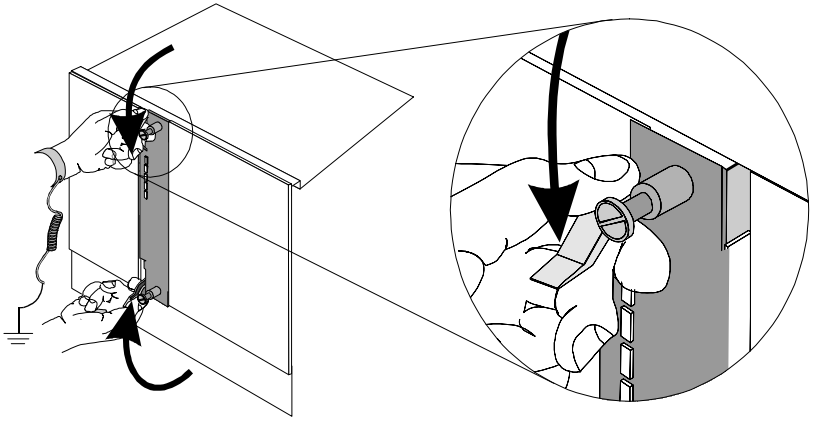
4 Use a #2 Phillips screwdriver to remove the safety panel covering this slot.



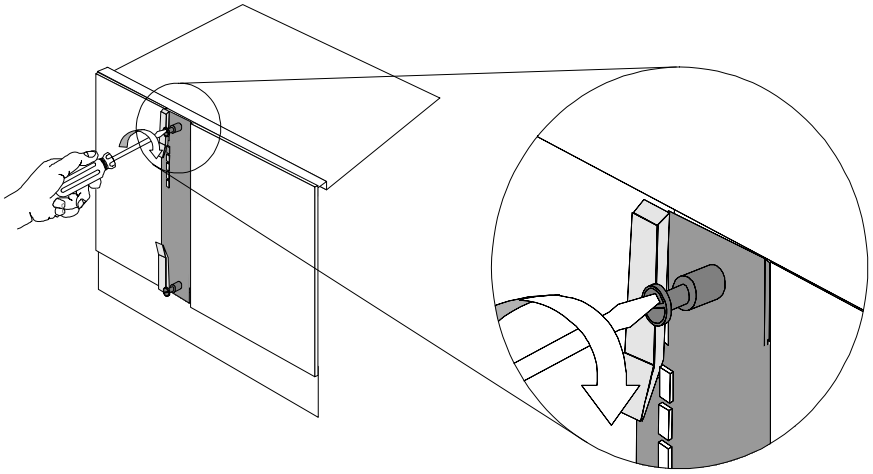
5 Insert the NAC between the slot's upper and lower card guides.



6 Holding the tabs perpendicular to the NAC's front panel, slide the NAC into the chassis, until the front of the NAC is flush with the chassis. Push the tabs toward each other to secure the NAC.



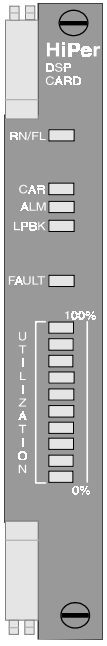
7 Use a flat-head screwdriver to tighten the screws on the front panel.



8 Cover any unused chassis slots with safety panels.

9 Apply power to the chassis, if power is not already applied.

10 After the NAC boots, verify that the RN/FL (run/fail) LED is green.



- If the RN/FL LED does not light, is solid red or flashing red, there is an error. Refer to the *Trouble Clearing* section for more information.
- If the RN/FL LED is green, continue configuring the HiPer DSP NAC. Refer to the Product Reference for configuration information.

A TROUBLE CLEARING AND TECHNICAL SPECIFICATIONS

Trouble Clearing

This table provides HiPer Digital Signal Processor (DSP) Network Application Card (NAC) trouble clearing information for problems occurring at power-up.

Symptom	Cause	Trouble Clearing
The RN/FL LED is solid red	Critical failure.	**1** Remove NAC and reinstall. **2** If the boot problem persists after the NAC goes through its boot-up routine, contact 3Com Technical Support.
The ALM LED is solid red	The NAC has detected no span connected to the NIC or the span options are not configured properly.	**1** Verify that your NIC is installed correctly and that the span is connected to the NIC properly. **2** Consult the *HiPer DSP Product Reference* to verify that the span lines are configured properly.
The Fault LED is solid red	The diagnostics failed while the card was booting.	**1** Connect to the HiPer DSP NIC console port per the instructions in the *HiPer DSP T1/E1 NIC Getting Started Guide*. **2** Remove the NAC from the slot and reinstall it using the instructions in this guide. **3** Note the error codes reported on the command line interface (CLI). **4** Contact 3Com Technical Support and give them the error codes to assist in the trouble clearing process.

NAC LED indicators

Physical State	Carrier LED State	Alarm LED State	Loop back/ D-channel LED State	Condition/Physical State
F1	Green	Off	Off	No Alarm
F2	Red	Off	Off	Yellow Alarm Remote Frame Alarm
F3	Off	Red	Off	Red Alarm Loss of Signal
F4	Off	Red	Off	Red Alarm Out of Frame
F5	Green	Red	Off	Blue Alarm Unframed all ones
F6	Red	Red	Off	CRC & RAI
			Amber	D-Channel down
	Green	Off	Green	Loop Back in Progress

Correcting NAC alarms and/or error conditions

Alarm/Error	Level	Diagnosis/Trouble Clearing
Remote Frame Alarm	Yellow	The remote end has lost the HiPer DSP's framing or signal and sends this alarm to the HiPer DSP.
Loss of Signal	Red	The received T1 or E1 signal has been lost. The HiPer DSP declares a red alarm and sends a yellow alarm to the remote end.
Out of Frame	Red	The received T1 or E1 framing has been lost and the framed payload can no longer be received. The HiPer DSP declares a red alarm and sends a yellow alarm to the remote end.
Unframed all ones	Blue	The remote end is sending out an all ones signal. This is usually done when the remote end can not send out a framed signal.
RFA and Continuous CRC errors	N/A	The HiPer DSP has received excessive CRC errors in a one second period and declares state F5. For E1-PRI certification this is less than 931 errors in one second.

Refer to the NAC's Product Reference for additional hardware trouble clearing information. The NAC's user interface (UI) console has status screens that supply information on power-up self tests and card status.

Technical Specifications

Certification

T1 HiPer DSP

EMI/RFI	■ FCC 15A ■ EN55022 A
Safety	■ UL 1950 ■ C-UL ■ EN 60950 ■ JATE
Telco	■ FCC 68 ■ IC CS-03

E1 HiPer DSP

EMI/RFI	■ FCC 15A ■ EN55022 A ■ VCCI, AUSTEL
Immunity	■ EN 50082-1
Safety	■ UL 1950 ■ C-UL ■ EN 60950
Telco	■ CTR4

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 their own expense.

Processor

Board Manager System	PowerPC RISC CPU
Application Co-Processor System	Dual PowerPC RISC CPUs

Current Draw

TI HiPer DSP NAC	+ 5.2 VDC @ 4.3A typical maximum
E1 HiPer DSP NAC	+ 5.2 VDC @ 4.8A typical maximum

Typical maximum refers to the maximum current draw under most typical configurations.

Environment

Shipping and Storage

Temperature:	-25 to 75° C, -13 to 167° F
Humidity:	0 to 100%, Non-condensing

Operating

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

Physical Dimensions

	Inches	Centimeters
Length:	12.95	32.89
Width:	.79	2.00
Height:	6.90	17.53

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