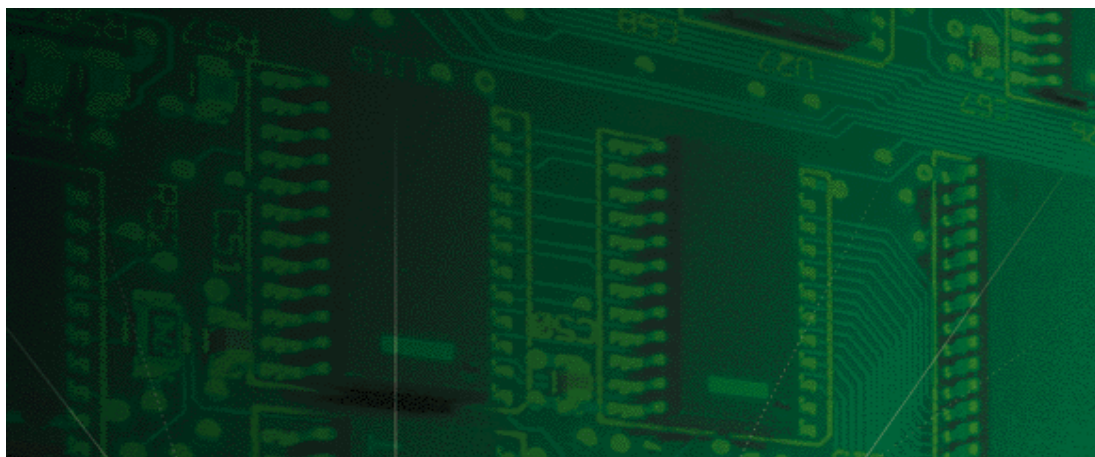




HiPer DSP T1 and E1

Release Notes



Part No. 10030418-01
Service Release
Version 2.0.51

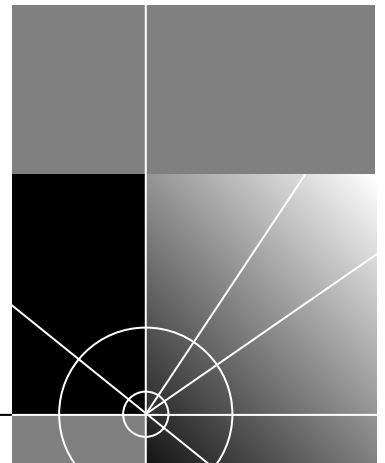


HiPer DSP T1 and E1

Service Release Notes Version 2.0.51

<http://www.3com.com/>

Part No. 10030418-01



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CONTENTS

HIPER DSP T1 AND E1 RELEASE NOTES

About These Release Notes	1
Version Numbering	1
Emergency or Service Releases	1
General Availability Releases.....	2
Software Compatibility	2
New Features and Descriptions.....	3
Installing This Version	3
Installing the New Software.....	3
The Download Process	4
Typical Z-Modem Download.....	4
Typical SNMP/Total Control Manager TFTP Download	4
Downloading HiPer NAC Software using Z-Modem on the Console Port	5
What You Will Need.....	5
Checking the Software Version	5
System Requirements	5
Preparing to Download Software	5
Downloading the Software	6
Downloading HiPer NAC Software through an SNMP MIB Browser.....	6
System Requirements	6
Before You Start.....	7
Temporarily Copy the Software onto the Management Station	7
Start the Download.....	7
Checking Status of the Download	8
Downloading HiPer NAC Software through Total Control Manager	8
Connect to the NMC	8

Temporarily Copy the Software onto the Management Station	8
Checking the Software Version	9
Start the Software Download	9
About the Software Download Window	10
Trouble Clearing the Software Download	11
What Happens During a Download?	11
"Device Not Responding" Error Message	11
Restoring the Previous Software	11
Resolved Issues	12
Unresolved Issues	13
Other Important Information	14
Compatibility	14
Non-Facility Associated Signaling	14
Take the B-Channels Out of Service	14
Power-On Diagnostics	15
HiPer DSP Network Interface Card, Second Revision	15
Trouble Clearing a Yellow Fault LED	16
Configuring the HiPer DSP Network Interface Card Jumpers	17



HiPer DSP T1 AND E1 RELEASE NOTES

About These Release Notes

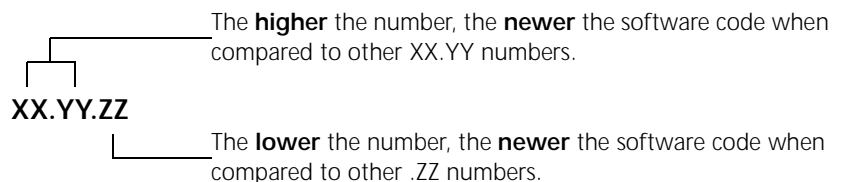
These Release Notes contain information important to the installation and configuration of HiPer DSP T1 and E1 version 2.0.51, which was built from version 2.0.60. They also include new features and information that changed after the Total Control Documentation Library System Release 3.5.

Version Numbering

When identifying new software code, 3Com uses a version numbering system that varies depending on whether the software code is an Emergency, Service, or General Availability (GA) Release.

Emergency or Service Releases

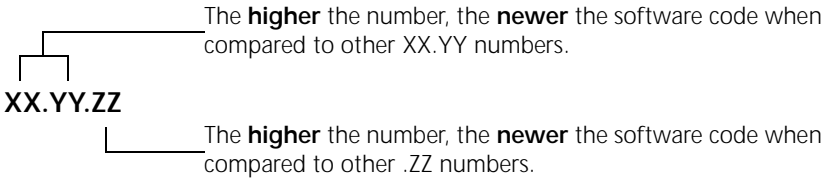
Determine the most recent Emergency or Service Release Notes by comparing the software code's version numbers. The software code's version numbers are arranged in this pattern: XX.YY.ZZ.



For example, HiPer DSP Service Release Notes Version 1.2.59 is newer than HiPer DSP Service Release Notes Version 1.2.60. The .ZZ number continues to lower until GA Release Notes are posted.

General Availability Releases

Determine the most recent GA Release Notes by comparing the software code's version numbers. The software code's version numbers are arranged in this pattern: XX.YY.ZZ.



For example, HiPer ARC GA Release Notes Version 4.1.11 is newer than HiPer ARC GA Release Notes Version 4.0.30.

Software
Compatibility

HiPer DSP version 2.0.51 is compatible with these Total Control products:

Product	Software Version
HiPer DSP	T1 and T1/PRI: *2.0.51
	E1/PRI: *2.0.51.
Quad Modem	Double Sided: 6.0.6
	Single Sided: 6.1.6
Total Control Manager	Windows: 6.0.86
	Solaris: 6.0.20
	HP: 6.0.20
Network Management Card (NMC)	16 MB (486-based) NMC: 6.1.17
	HiPer (Pentium-based) NMC: 6.2.17
Security and Accounting	Windows: 6.0.8, *6.0.83
	Solaris: 6.0.7, *6.0.87
T1-386	4.3.2
T1-PRI	3.1.5
T1-186	3.5.0
E1/PRI	3.1.5
E1/R2	2.0.20
NETServer	Ethernet: 3.8.1
(continued)	

Product	Software Version
HiPer ARC	Ethernet: 4.1.11, *4.1.59-6, 4.2.32-1
NETServer Manager	3.4.2
HiPer ARC Manager	Windows: 1.1.8 Solaris: 1.1.9 HP: 1.1.8
EdgeServer	1.6
EdgeServer Pro	2.5

New Features and Descriptions

There are no new features in this service release.

Installing This Version

You can install this version in two ways, either by using Total Control Manager or by using Software Download-2. Instructions for using both methods are in the next section.

Also, to reuse your current configuration, be sure to save the configuration using Total Control Manager.

Installing the New Software

To install this version, obtain the software code from 3Com's TOTALservice website at **<http://TOTALservice.3Com.com>**.

Next, install the software using the following Software Download-2 (SDL-2) procedure.

SDL-2 is a utility that allows software download to a HiPer Network Application Card (NAC). The download can be performed locally through the console port or remotely across a LAN or WAN.



Only use SDL-2 when downloading to HiPer NACs. All other software downloads use SDL-1 (PCSDL).

For more information on Total Control Manager, refer to the *Total Control Manager/SNMP Software Guide*.

The Download Process

This section describes what occurs during the download process. You may use one of these methods to complete an SDL-2:

SDL-2 Method	Use
Z-Modem download	Console port download using Z-Modem protocol directly from the host PC to the NAC.
SNMP or Total Control Manager	Download across a LAN or WAN to the NMC using TFTP protocol through a MIB browser or Total Control Manager. The file then transfers automatically to the NAC across the management bus.

Typical Z-Modem Download

The typical Z-Modem download is a Z-Modem file transfer from the host PC to the target NAC. Use a terminal emulator package that supports Z-Modem. Upon the completion of the Z-Modem transfer, a result message will be displayed regarding the success or failure of the file transfer. Successful transfer does not necessarily mean that the entire process has completed successfully. The device may complete the file transfer, but it could still encounter an error programming NVRAM.

After the NAC is finished processing the download file, it will wait about five seconds then send an ASCII result string to the serial port and display it on the emulator screen.

If the SDL-2 agent aborts the download operation, the final ASCII result message displays after the five-second delay.

Typical SNMP/Total Control Manager TFTP Download

You may also use an SNMP browser or Total Control Manager to download to a chassis NAC. In this case, the download occurs through the NMC, which then distributes the code to the appropriate NAC. When you select multiple devices, they must be of the same type. For example, all HiPer DSP NACs.

When completing this type of SDL-2, select the slots to which you want to download. If using a MIB browser, issue a SET command in the slot command table for each device selected.

If no TFTP occurs within the time-out, the SDL-2 trigger command aborts. As the TFTP progresses, the NMC distributes the download file contents to each of the selected devices. The final result is indicated in the SNMP command table's command result and command code objects. If you are using Total Control Manager, a "Success" message indicates the download is complete.

Downloading HiPer NAC Software using Z-Modem on the Console Port

You may use the Z-Modem transfer to download software through the console port.

Use this SDL-2 procedure if you are installing code to the NAC through the console port. SDL-2 is a utility that allows you to download software to a NAC via a serial link, both locally and remotely.

What You Will Need

To send the new code to the NAC from the console port, use a standard terminal program that can send files using the Z-Modem protocol.

Checking the Software Version

From the console interface, type **ATI7** at a modem prompt to display product configuration.

To determine the version of software, view the date and revision of the Boot Block, Board Manager, ACP, and DSP.

System Requirements

A computer with a serial port capable of link rates up to 115200 bps and a null modem cable with RJ-45 and RS-232 connectors on each end.

Preparing to Download Software

Set your terminal program to 115200 bps, 8 bits per character, no parity, one stop bit, and hardware flow control on.



HiPer DSP link port speeds are fixed and cannot be changed. Although either port can be used, 3Com recommends using the Auxiliary port when downloading software. The Auxiliary port has a fixed 115200 bps interface.

Downloading the Software

Complete these steps to download software:



If power to the NAC is removed during any of these software download steps, you must restart the procedure.

- 1 Run a terminal program, such as HyperTerminal, that supports the Z-Modem transfer protocol.
- 2 Manually reboot the NAC by pulling the card forward and re-inserting it.
- 3 When the "Enter Download Trigger" prompt appears, type **AT{Z}** in all capital letters. Using your terminal program, select and send the boot file.



*Use all capital letters when typing **AT{Z}**. Type the characters before the hardware reboot cycle begins. The hardware reboot cycle begins about 10 seconds after you manually reboot the card. If the card begins the reboot cycle before you begin the download, reboot the card and perform this procedure again.*

The download is complete when you see this message:

```
"0;Download successful: File=file.dmf"
Programming flash
"!!-----> SDL2 for the PPC403 <-----!!"
"__ Enter Download Trigger __"
```



Do not input the trigger when prompted the second time unless you want to re-download the code.

The software download is now complete and the card reboots.

Downloading HiPer NAC Software through an SNMP MIB Browser

You can use an SNMP MIB browser to transfer software across a LAN or WAN to a chassis NAC.

System Requirements

A MIB browser and a TFTP server. Both must be able to communicate with the NMC NIC over an Ethernet or SLIP connection.

Before You Start

- 1 Make a backup copy of the software disk if a disk was received.
- 2 Set up the MIB browser. Select the **uchasCmdTable** (1.3.6.1.4.1.429.1.1.7.1) table within the **uchasCmd** group of the CHS MIB. This MIB is in the private.enterprises.usr.nas.MIB.tree.
- 3 Set up the TFTP server. Set the server to binary transfer mode with a connection to the IP address of the NMC.
- 4 Verify that the NMC NIC is configured for remote access. Refer to the appropriate NIC Getting Started Guide.

Temporarily Copy the Software onto the Management Station

If you are downloading the software from the 3Com website, you need to temporarily copy the files to the management station. If you are using Total Control Manager on the management station, install to C:\USRSUITE\SDL. Otherwise, install the software to an appropriate temporary directory.

Start the Download

Complete these steps:

- 1 Determine the slot number of the HiPer card to which you will download.
- 2 Connect to the chassis.
- 3 Using the MIB browser, select the **uchasCmdFunction** object.
- 4 Choose the index for the slot number of the card to which you will download.
- 5 Issue a **SET** request command to set the object to enumeration 6, which corresponds to softwareDownload2. For example, if the card to which you are downloading is in slot number 3, **SET uchasCmdFunction.3** to "6".
- 6 Once the SET is issued, and the response is received, the **uchasCmdResult** object will indicate whether the download can proceed.
- 7 Issue a **GET** or **GET-NEXT** request to the **uchasCmdResult** object that contains the index number used in step 3. For example, if the card to which you are downloading is in slot number 3, the GET or GET-NEXT request will be completed on **uchasCmdResult.3**.

- 8 If the result of the GET or GET-NEXT request is " 3 ", which corresponds to the InProcess enumeration, then continue this procedure. Otherwise, check the status of the card to which you are downloading and begin again at step 3.
- 9 Start the TFTP session.

Checking Status of the Download

Determine status of the download by checking **uchasCmdResult**.

The possible **uchasCmdResult** values are:

Enumeration	Download status
none (1)	No result
success (2)	Successful download
inProgress (3)	Download in progress
notSupported (4)	Not supported
unAbleToRun (5)	Unable to complete the download—card may be in a bad state or not accepting the download
aborted (6)	Download file was aborted
failed (7)	Download failed

Downloading HiPer NAC Software through Total Control Manager

You can use Total Control Manager to transfer software across a LAN or WAN to a chassis NAC.

Connect to the NMC

Connect the management station to the NMC NIC through a LAN, WAN, or SLIP connection. Refer to the *NMC Getting Started Guide*. You may also need to configure the NMC SLIP port. Refer to the *NMC Getting Started Guide* or the *Total Control Manager Getting Started Guide*.

Temporarily Copy the Software onto the Management Station

If you are downloading the software from the 3Com website, you need to temporarily copy the files to the management station. If you are using Total Control Manager on the management station, install to C:\USRSUITE\SDL. Otherwise, install the software to an appropriate temporary directory.

Checking the Software Version

Follow these steps to check the currently-installed version of software:

- 1 Open Total Control Manager and select the appropriate chassis.
- 2 From the **Configure** menu, select **Programmed Settings**, and then select **Inventory**.
- 3 Check the software version of the appropriate NAC after the inventory is complete.

Start the Software Download

Complete these steps:



Before starting a Total Control Manager SDL-2, unload any terminate-and-stay-resident (TSR) programs. TSRs will greatly slow SDL-2.

- 1 Launch the Total Control Manager application.
- 2 Establish a connection with the chassis.
- 3 From the device display on the Total Control Manager/SNMP console, select the card(s) to which you want to perform the download.



Once you enter the Software Download window, you may select or deselect cards by their card number.

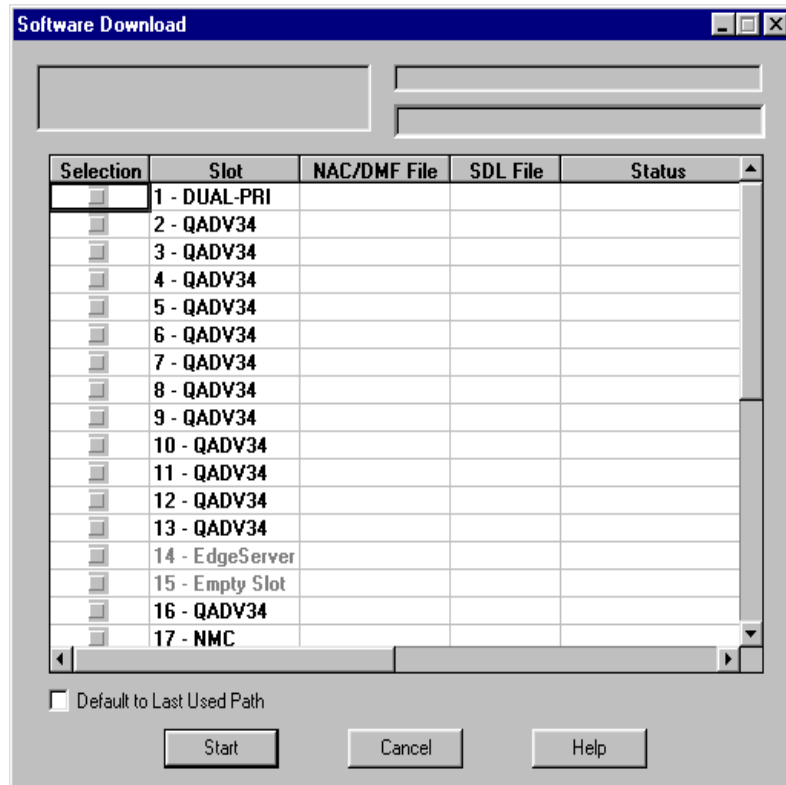
- 4 On the **Configure** menu, click **Software Download**. Or, click the **Software Download** icon on the toolbar. Refer to *About the Software Download window* for more information.
- 5 Click **Start** to begin the download.
- 6 During the download, progress messages are displayed in the upper-left corner of the Software Download window. A "Success" message indicates the download is complete.



*If you selected more than one card to which to download, and you want to cancel the download before it completes, click **STOP**. The in-progress SDL-2 continues, but the remaining downloads are canceled. Corresponding checkmarks are removed.*

About the Software Download Window

This is the software download window, which appears when completing SDL-2 from Total Control Manager.



Column name	Function
Selection	Allows you to select multiple cards on which to perform downloads. A checkmark appears for every selected card. The device display also shows a checkmark for each selected card.
Slot	Lists the chassis slot number and card name.
NAC/DMF File	Lists the most current .NAC or .DMF file in the C:\USRSUITE\SDL directory. If the software version is more recent than the NAC itself, the entry appears in red.
SDL File	Lists the most current .SDL file in the C:\USRSUITE\SDL directory. If the software version is more recent than the NAC itself, the entry appears in red.
Status	Lists the status of each software download on a card-by-card basis. Messages include "In Progress" and "Complete".



*If you have loaded or moved the .NAC, .DMF, or .SDL files to a directory other than C:\USRSUITE\SDL, position the cursor in the appropriate column in the same row as the desired card. Then, double-click the left mouse button. The **Open** window appears. Select the appropriate file.*

Trouble Clearing the Software Download

What Happens During a Download?

When the SDL-2 program begins, the management station sends an AT command sequence to the appropriate NAC to enable SDL-2 mode. Control then transfers to the software loader. While in SDL-2 mode, the NAC's RN/FL LED flashes green.

The SDL-2 program verifies the initialization and operation software, then begins the download. As the program executes, status messages are displayed.

"Device Not Responding" Error Message

If you receive a "Device Not Responding" error message while trying to download, too much other management traffic may be routing to the chassis. Reduce other operations, including multiple management station access if necessary, and try the download again.

Restoring the Previous Software

To restore the previous version of software, obtain the software code from 3Com's TOTALservice website at <http://TOTALservice.3Com.com>. Then, use the SDL-2 utility or Total Control Manager to install the software. Refer to *Installing the New Software* in the previous section.

Resolved Issues

These issues were resolved in this release:

MR Number	Description
MR 1223	<p>Issue — HDM Run/Fail LED does not stop flashing after aborted software download.</p> <p>Resolution — Resolved in HiPer DSP version 2.0.51.</p>
MR 2144	<p>Issue — E1/R2 call failure reasons need to be more specific. Added new failure codes:</p> <ul style="list-style-type: none">■ timerExpired(69)■ normalUserCallClear(73)■ abnormalDisconnect(77)■ r2SigCauseCongestion(108)■ r2SigCauseUnallocNumber(109). <p>Resolution — Resolved in HiPer DSP version 2.0.51.</p>
MR 2346	<p>Issue — Improved connections with Rockwell HCF modem when roundtrip delay is between 30 and 40 milliseconds.</p> <p>Resolution — Resolved in HiPer DSP version 2.0.51.</p>
MR 2383	<p>Issue — Improved V.42 detection phase.</p> <p>Resolution — Resolved in HiPer DSP version 2.0.51.</p>
MR 2412	<p>Issue — HiPer DSP will not establish DS1 carrier sync on T1 or PRI lines if the received signal level is less than -20db.</p> <p>Resolution — Resolved in HiPer DSP version 2.0.51.</p>
MR 2430	<p>Issue — Reboot on Non-D-channel NFAS card results in the card not sensing the presence of the D-channel card.</p> <p>Resolution — Resolved in HiPer DSP version 2.0.51.</p>
MR 2525	<p>Issue — Intermittent problems with HiPer DSP hardware revision 0.54 and 0.55. This includes:</p> <ul style="list-style-type: none">■ Spurious coredumps and reboots■ Failure to boot up card in chassis■ Disconnect of all calls online <p>Resolution — Resolved in HiPer DSP version 2.0.51.</p>

Unresolved Issues

These issues remain unresolved with this release:

MR Number	Description
MR 2136	Issue — Dialout does not work with PRI circuit when routing method is set to Round Robin or First Available. Workaround — Set modem routing method to Fixed Assignment.
MR 1832	Issue — Rockwell V.90 modems intermittently disconnect during speedshift. Status — 3Com is currently investigating this issue.
MR 1993	Issue — HiPer DSP does not support Reset by DTE trap. Status — 3Com is currently resolving this issue.
MR 2319	Issue — HiPer DSP does not progress through all *Ux call type attempts if a Release Complete is received from the Network for any of the call attempts. Status — 3Com is currently resolving this issue.
MR 2056	Issue — EEH Elink 343 V.110 connections to HiPer DSP do not complete. Status — 3Com is currently investigating this issue.
MR 2174	Issue — V.22 1200 bps is not functioning. Status — 3Com is currently investigating this issue.
MR 2511	Issue — Dialing from a HiPer DSP to a Cisco 760/761 (version 4.2 or 4.3) does not negotiate SyncPPP. Status — 3Com is currently investigating this issue.

Other Important Information

This section describes additional important information.

Compatibility

Non-Facility Associated Signaling (NFAS) will work with HiPer DSP 2.0.51 and Network Management Card (NAC) 6.1.17 (486-based) and 6.2.17 (Pentium-based).

Non-Facility Associated Signaling

If you are using Non-Facility Associated Signaling (NFAS) with the first version of the HiPer DSP NIC, read this section.

You can determine if you are using the first version of the HiPer DSP NIC by pulling the card and looking for jumpers. Refer to “Configuring the HiPer DSP Network Interface Card Jumpers” later in these release notes. If the NIC does not have jumpers, you have the first version of the HiPer DSP NIC.

Also, you can type **ATI7** from the console interface to determine the NIC type. A display appears including NIC ID information. The IDs for both NIC are:

- Original NIC ID is 37
- The Second Revision NIC ID is 45

Also, the first version of the HiPer DSP NIC has the part number **69-001826-00**. The NIC part number is printed on a white sticker located on the plastic, mid-plane connector.

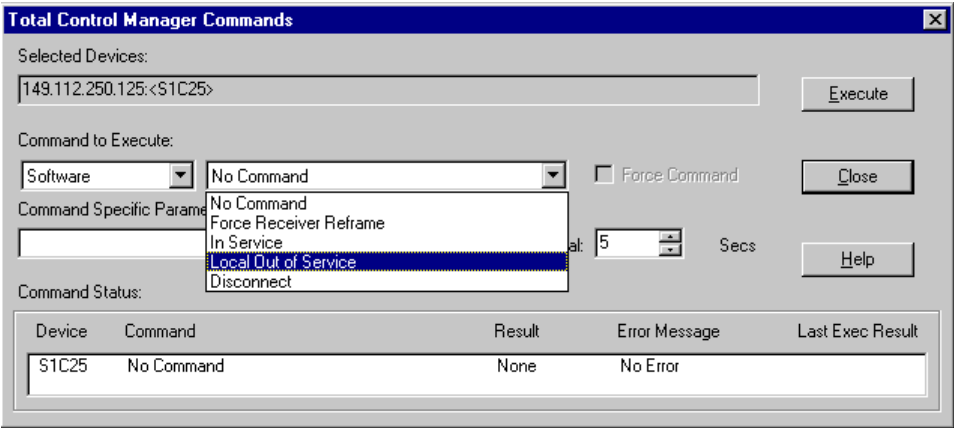
Complete the following steps before you unplug the HiPer DSP NAC, while power is on, or before the HiPer DSP NAC is reset:

Take the B-Channels Out of Service

- 1 Determine which HiPer DSP NAC you will unplug or reset.
- 2 Using Total Control Manager, select the span LEDs of that HiPer DSP NAC.
The span appears blue.
- 3 Click the **Commands** icon. The Select DS0(s) window appears.
- 4 Click the **DS1** radio button to select the span and click **OK**.
The Total Control Manager Commands window appears.
- 5 Under Commands to Execute, click the right pull-down field and select **Local Out of Service**.



The Commands icon



6 Click **Execute**.

Before using the HiPer DSP again, put the span back in service using the same procedures above. However, instead of selecting Local Out of Service, select **In Service**.



If you do not follow this procedure, the telephone company's switch may not know the HiPer DSP is out of service. Therefore, the switch may route calls to a HiPer DSP NAC that is resetting or that was removed from the chassis.

**Power-On
Diagnostics**

During power-on, the HiPer DSP runs card diagnostics. HiPer DSP version 2.0 and later includes enhanced power-on diagnostics: extended memory testing capabilities, allowing the card to perform a more complete and thorough diagnostic check. In the event of a failed test, an error message will be sent to the console port, and the boot process will halt. To resolve this, contact 3Com Technical Support.

**HiPer DSP Network
Interface Card,
Second Revision**

The HiPer DSP Network Application Card includes a **Fault** light emitting diode (LED). The Fault LED indicates diagnostics for the HiPer DSP Network Interface Card (NIC) Second Revision, as well as NAC diagnostics.

For detailed information about the Fault LED, refer to the table below.

LED	Color	One or more of the following has occurred
FAULT	yellow	There is a problem in one or more modems. The HiPer DSP NIC jumpers are not configured properly. See below for trouble clearing information.
	red	There is a critical problem in one or more modems, or the NAC in general.
	none	The HiPer DSP NIC jumpers are configured correctly.

Trouble Clearing a Yellow Fault LED

If the HiPer DSP NAC displays a yellow Fault LED:

Pull the HiPer DSP NIC Rev-02 and change the span jumpers. The span jumpers should be consistent with your build of the HiPer DSP NAC.

Example If you are using a HiPer DSP NAC T1 your NIC jumper should be set to T1. If you are using a HiPer DSP NAC E1 your NIC jumper should be set to E1.

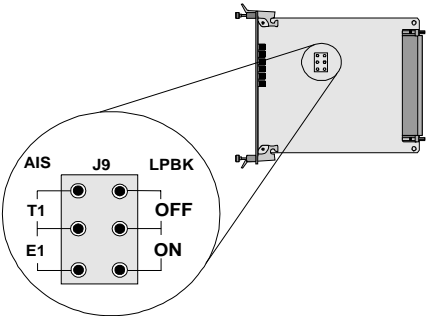


HiPer DSP NIC Rev-02 is only compatible with Total Control System 3.5 software and future Total Control System releases.

If your jumpers are not installed, refer to the next section, Configuring the HiPer DSP Network Interface Card Jumpers.

Configuring the HiPer DSP Network Interface Card Jumpers

Use the following tables and figures to configure the jumpers.



Jumper	Function
T1 Loopback On	Power ON Relay Loopback enabled.
E1 Loopback On	Power ON Relay Loopback enabled.
T1 Loopback Off	Transmitting all Ones (AIS). <i>This is the T1 package factory setting.</i>
E1 Loopback Off	Transmitting all Ones (AIS). <i>This is the E1 package factory setting.</i>

The following table includes figures of the jumper settings.

T1 LPBK ON	E1 LPBK ON	T1 LPBK OFF	E1 LPBK OFF
<div><div>T1</div><div>E1</div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>OFF</div><div>ON</div></div></div>	<div><div>T1</div><div>E1</div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>OFF</div><div>ON</div></div></div>	<div><div>T1</div><div>E1</div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>OFF</div><div>ON</div></div></div>	<div><div>T1</div><div>E1</div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>OFF</div><div>ON</div></div></div>



3Com strongly recommends using jumpers in all cases.

To use loopback, you must select a span mode: T1 or E1. If you do not select T1 or E1, the NIC will default to the high impedance (all zeroes) state. High impedance state is not recommended.



When the power is off, the Second Revision NIC is in high impedance mode. This is different from the original NIC because it executes loopback mode.

If you unplug and reset the NIC, be sure to unplug and reset the HiPer DSP NAC after resetting the NIC.



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