

RADview-PC/TDM

Network Management System for TDM Applications

DXC

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Chapter 1

Introduction

1.1 Overview

RADview provides a complete solution for monitoring and controlling DXC digital cross-connects.

The DXC enables the formation of meshed private data networks with T1/E1 or $n \times 56/64$ kbps access (where n is the number of needed active time slots in the ports' data rate formula). In combination with the Kilomux-2100/2104 and/or Megaplex-2100/2104, which act as feeder multiplexers, the DXC provides solutions for connection of multiple sites and to a private network.

The DXC family includes the following products:

- **DXC-30, DXC-30E:**
Digital Cross-Connect and T1/E1 Converter supporting up to 30 ports.
- **DXC-10A:**
Compact Digital Cross-Connect and T1/E1 Converter supporting up to 30 ports.
- **DXC-8R:**
Digital Cross-Connect and E1/T1 Converter supporting up to 30 ports.

The RADview DXC management application provides two main modes of operation - Edit Configuration and Agent. This chapter describes operation in the Edit Configuration Mode. For information about the Agent mode, see the *DXC Agent Operations chapter*.

1.2 Connecting RADview-PC Management Station to TDM

The RADview-PC management station may be connected to DXC units in one of the following setups:

- Direct management-to-TDM link running on Single Line Internet Protocol (SLIP)
- Connection from management station in a LAN through an MBE to a TDM unit.

Direct Management Connection

In this application, the management station is connected directly to a DXC unit. If more than one device is installed on this network, the device directly connected to management is the *local* unit. Any other devices are *remote*.

This application requires installation of SLIP. It is the customer's responsibility to acquire a SLIP communication program and to install it according to the manufacturer's instructions. RADview-PC supports both public domain SLIP and vendor SLIP.

Figure 1 shows a sample direct management application.

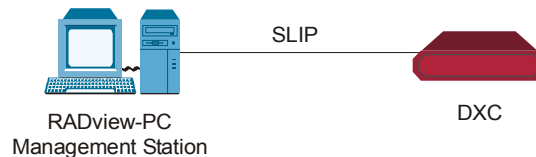


Figure 1. Direct Management Application

Management via LAN

In this application, the management station is connected to the device through an Ethernet LAN and an MBE (Ethernet Elementary Bridge). If the MBE and the device are located in the same subnet, the system will operate immediately upon hardware connection with no need for further software configuration.

Figures 2 and 3 show a sample management via LAN application.

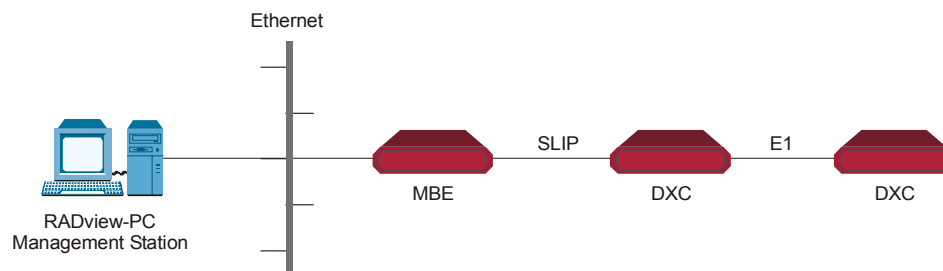


Figure 2. DXC Management via LAN

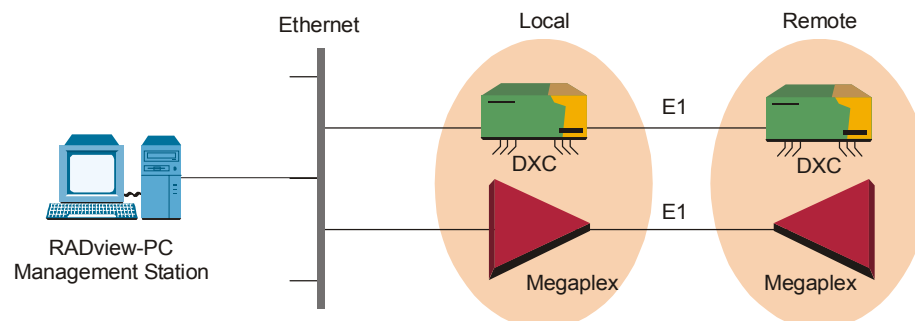


Figure 3. DXC Management via LAN

1.3 Preliminary Hardware Configuration

Preliminary DXC Hardware Configuration

Preliminary hardware configuration is performed using a Terminal Emulation program.

➤ **To initiate terminal operation with the DXC:**

The terminal Emulation program will use the following communication parameters:

Baud Rate 9600

Data Bits 8

Stop Bits 1

Parity None

Note *At the beginning of terminal emulation, and after specified time-out periods, you will be prompted to type the password. The default password is ENTER.*

1. Set the terminal definition. For example, for VT-100, type **DEF TERM VT-100**.

Note *When the Network Management information is transmitted via the serial port, define the serial port parameters as follows:*

2. Type **def sp**

The default parameters will be displayed.

3. Set the baud rate, data bits, and stop bits to correspond to the SLIP or PPP.

4. Set the auxiliary device to **NMS SLIP** or **NMS PPP**.

Use **NMS SLIP** when the CONTROL port connects to an SNMP management station and/or Telnet host, using the SLIP protocol.

Use **NMS PPP** when the CONTROL port connects to an SNMP management station and/or Telnet host, using the PPP protocol.

Note *1. The Slip and PPP selections are supported only when the CONTROL port interface (selected by means of internal DCL.3 switches) is DCE.
2. At any time, only one of the two ports of the DCL.3 module can be used for management access.*

➤ **To edit the parameters:**

1. Press the spacebar to move from one parameter to the next. Press the **F** and **B** keys to move forward and backwards among the possible values of the selected parameter.

2. Press Enter when you complete your changes.

➤ **To define agent parameters:**

3. Type **def agent**.

4. Set the appropriate values for the following:

- IP Address.
 - Subnet Mask.
 - Default Gateway.
 - SNMP Read Community.
 - SNMP Write Community.
 - SNMP Trap Community.
5. If you are using inband management, type **def name**.
- **To add or modify DXC information in the database:**
- Type **upd db**.

Note

You must reset the DXC after modifying the database.

Chapter 2

DXC Edit Configuration Operations

2.1 Edit Configuration Mode

The Edit Configuration Mode displays a user-programmed DXC configuration or the DXC's default configuration.

All operating parameters are determined by a configuration that is stored in the DCL.3 (control) card of the DXC.

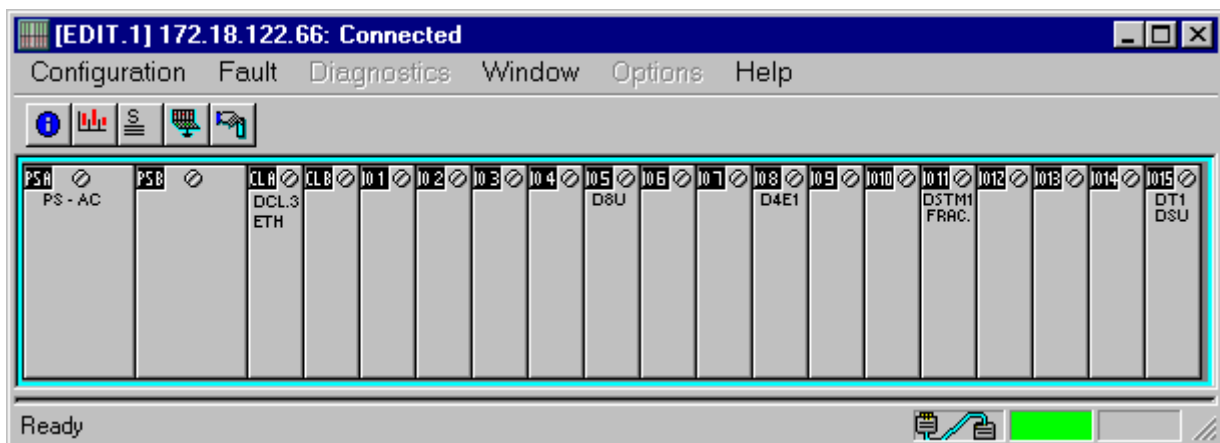
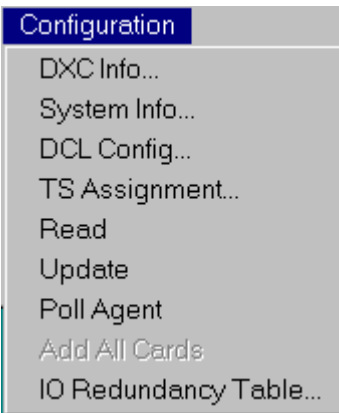
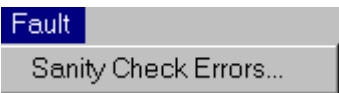


Figure 2-1. Edit Configuration Mode Edit View

2.2 Configuration Operations - Edit View

[Table 2-1](#) lists the different management options for the system level.

Table 2-1. System Management Options

	Tasks - Configuration	Dialog Box and Parameter Location	Path
	Setting DXC timing information	DXC Information dialog box (Figure 2-2)	Configuration ➔DXC Info...
	Displaying system information	System Information dialog box (Figure 2-3)	Configuration ➔System Info...
	Setting DCL configuration	DCL Configuration dialog box (Figure 2-4)	Configuration ➔DCL Config...
	Assigning Time Slots	TS Assignment Dialog Box (Figure 2-7)	Configuration ➔TS Assignment...
	Transferring (uploading) current agent configuration to edit configuration	See Reading (Uploading) the Agent Configuration	Configuration ➔Read
	Transferring (downloading) edit configuration to agent configuration	See Updating (Downloading) the Configuration to the Agent	Configuration ➔Update
	Polling the agent	See Polling	Configuration ➔Poll Agent
	Setting redundancy parameters	IO Redundancy Table (Figure 2-5)	Configuration ➔IO Reundancy Table...
	Tasks - Fault	Dialog Box and Parameter Location	Path
	Viewing list of sanity check errors	Sanity Check Errors List (Figure 2-17)	Fault ➔Sanity Check Errors...
	Tasks - Window	Dialog Box and Parameter Location	Path
	Displaying Agent view	See Displaying the Agent View	Window ➔Agent View

DXC Clock Source Configuration

You can display and configure the clock source for the Master Clock and the Fallback Clock.

- **To modify the DXC clock source configuration:**
 - From the **Configuration** menu, select **DXC Info...**

The DXC Information dialog box appears ([Figure 2-2](#)).

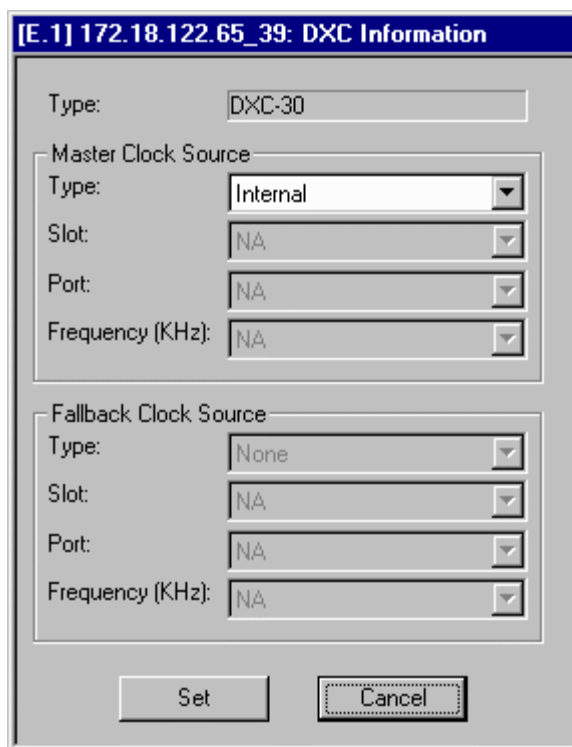


Figure 2-2. DXC Information Dialog Box

Table 2-2. DXC Information Parameters

Parameter	Possible Values / Remarks
Type	Type of WAN agent DXC-30, DXC-30E, DXC-10A, DXC-8R
Master Clock Source Group	Master timing reference for the DXC
Type	Main source for DXC timing. Station will not be available for selection if the Fallback Clock Source Type is Station Internal, Rx Clock, Station, None
Slot	The slot containing the card on which the master clock is located. This parameter is enabled only when the Master Clock Source Type is Rx Clock IO-1 to IO-15 Do not select an empty slot or unknown cards

Table 2-3. DXC Information Parameters (Cont.)

Parameter	Possible Values / Remarks
Port	The port through which the master clock signal is received by the DXC Internal-1..internal-30, external-1..external-16 Clock Source Type is Rx Clock If the selected Master Clock Source Slot contains a DHS card ensure that the Master Clock Source Port is configured as follows: - Rate is not 0 - Clock Mode is DTE2
Frequency (KHz)	Frequency of the station clock This parameter is enabled only when Type is Station 1544, 2048 KHz When the frequency is not relevant, it is not enabled.
Fallback Clock Source Group	Alternate (fallback) timing reference for the main link, to be used in case the master clock fails
Type	Alternate source for the DXC timing Station will not be available for selection if the Master Clock Source Type is Station Rx Clock, Station, None
Slot	The slot containing the card on which the fallback clock is located. This parameter is enabled only when the Fallback Clock Source Type is Rx Clock IO-1..IO-15 Do not select an empty slot or unknown cards
Port	The port through which the fallback clock signal is received by the DXC. This parameter is enabled only when the Fallback Clock Source Type is Rx Clock. If the selected Fallback Clock Source Slot contains a DHS card ensure that the Master Clock Source Port is configured as follows: - Rate is not 0 - Clock Mode is DTE Internal-1..internal-30, external-1..external-16
Frequency (KHz)	Frequency of the station clock. This parameter is enabled only when Type is Station When the frequency is not relevant, it is not enabled 1544, 2048 KHz.

Viewing System Information

The **System Info...** command enables you to view system information for the DXC.

➤ **To view the system information parameters:**

- From the **Configuration** menu, select **System Info...**

The System Information dialog box appears ([Figure 2-3](#)).

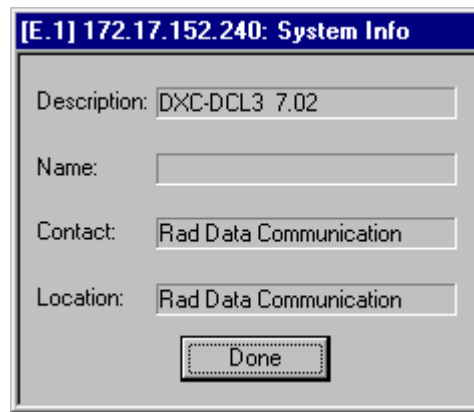


Figure 2-3. System Info Dialog Box

Setting the DCL Configuration

The **DCL Config** command enables you to set DCL data if one or two DCL.2 or DCL.3 cards are installed (not available in DXC-10A).

➤ **To view or change DCL configuration:**

- From the **Configuration** menu, select **DCL Config...**

The DCL Configuration dialog box appears ([Figure 2-4](#)).

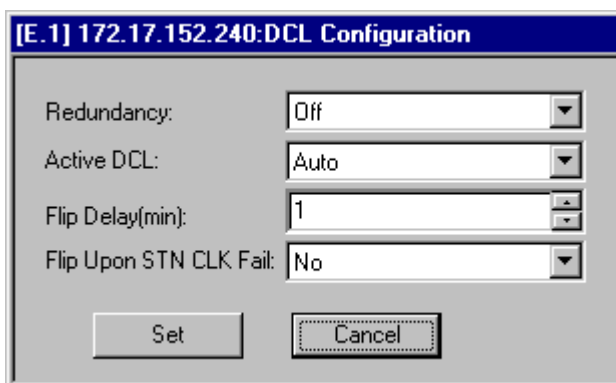


Figure 2-4. DCL Configuration Dialog Box

Table 2-4. DCL Configuration Parameters

Parameter	Possible Values / Remarks
Redundancy	Redundancy is available only when two DCL.2 or DCL.3 cards are installed in a DXC-30, DXC-30E or DXC-8R On, Off
Active DCL	Auto - the agent determines the active DCL card DCL-A selects the DCL card installed in the CL-A slot as the active DCL card DCL-B selects the DCL card installed in the CL-B slot as the active DCL card
Flip Delay (min)	Minimum acceptable interval (min.) between consecutive decisions to flip between DCL.2 or DCL.3 cards 1, 2, 3, 4
Flip Upon STN CLK Fail	Indicates if Agent should Flip from one DCL card to another, when there is Station Clock Fail in the Online DCL card

No, Yes

TS Assignment

The TS Assignment command allows you to program the routing of time slots. For a complete description of the TS assignment function, see *Time Slot Routing*.

Reading (Uploading) the Agent Configuration

The **Read** command allows you to upload the current agent configuration from the DXC to the Edit Configuration. After the Read operation, the Edit Configuration is identical to the Agent configuration.

Note *Read is not available if there is no communication with the agent. After performing init db, configure CL and PS cards from RADview. Otherwise, they will be empty in Edit Configuration after performing Read operation.*

➤ **To upload the configuration from the agent:**

- From the **Configuration** menu, select **Read**.

The message **“Reading operation will replace Edit Configuration”** appears on the screen.

Updating (Downloading) the Configuration to the Agent

After editing the system, card, and port configurations, you can download the configuration information to the DXC.

Note *The Update option is not available if a test is running on a DHS card or if no communication exists between the management station and the agent. At least one power supply card (PS) and one common logic card (CL) must be installed in the DXC in order to download the configuration.*

➤ **To download configuration modifications to the agent:**

- From the **Configuration** menu, select **Update**.

The message, **“Update operation will replace Agent’s configuration”** appears on the screen.

After clicking **<OK>**, the new configuration is immediately downloaded to the DXC.

Note *The agent accepts the configuration only if it passes the agent's sanity check. In the event that the sanity check found errors, the message **“Sanity Check Errors”** appears and update cannot be performed. However, if the configuration does not pass the sanity check due to warnings (not errors), a message box appears indicating that there were warnings. Click **<Cancel>** to leave without updating/seeing the configuration. Click **<View Warnings>** to see warnings that were issued during the Sanity Check. Click **<Close>** to return to the message box without updating the configuration. Click **<Confirm Update>** to update the configuration with the warnings at any stage.*

Polling the Agent

The agent configuration's display can be updated via the Poll Agent command. This causes the Network Management Station to poll the agent and display the result immediately, without having to wait until the next automatic polling interval.

- **To poll the agent and update the agent's display:**
 - From the **Configuration** menu, select **Poll Agent**.

IO Redundancy Table

The **IO Redundancy Table** command enables you to set redundant ports for the DXC.

- **To view or change IO Redundancy Table parameters:**
 - From the **Configuration** menu, select **IO Redundancy...**

The IO Redundancy Table dialog box appears (Figure 2-5).

*Redundancy Mode	*Primary Slot	Primary Port	*Secondary Slot	Secondary Port	Recovery Mode	Recovery Time (sec)	HW/SW Flip
Single Slot Protection	IO-1	external-1	IO-1	external-1	Automatic	1	HW

Buttons: Set, Add..., Remove, Cancel

Figure 2-5. IO Redundancy Table Dialog Box

Table 2-5. Redundancy Table Parameters

Parameter	Possible Values / Remarks
Redundancy Mode	Indicates the Redundancy Mode for the DXC card Y Cable, Dual Cable, Single Slot Protection If Redundancy Mode=Single Slot Protection, the Primary Port and Secondary Port must be on of the same slot
Primary Slot	Indicates the Primary Slot for the card IO-1..IO-15 Only slots containing E1/T1, E3/T3, D4E1/T1, D8E1/T1, DSTM-1, HDSSL-E1/T1 cards are selectable
Primary Port	Indicates the Primary Port for the card NA, external-1..external-7, internal-1..internal-2

Table 2-6. Redundancy Table Parameters (Cont.)

Parameter	Possible Values / Remarks
Secondary Slot	Indicates the Secondary Slot for the card IO-1..IO-15 Only slots containing E1/T1, E3/T3, D4E1/T1, D8E1/T1, DSTM-1, HDSL-E1/T1 cards are selectable
Secondary Port	Indicates the Secondary Port for the card NA, external-1..external-8, internal-1..internal-2
Recovery Mode	Indicates the recovery mode for the card Automatic, Manual
Recovery Time (sec)	Indicates the recovery time in seconds 1..99
HW/SW Flip	Indicates Hardware/Software Flip NA, HW, SW
[Add...]	To add an IO redundancy couple, click < Add... > Enter parameters for the IO Redundancy Couple and click < Set >
[Change...]	To change an IO redundancy couple, select the line that you want to change and click < Change... > Enter parameters for the IO Redundancy Couple and click < Set >
[Remove]	To remove an IO redundancy couple, select the line that you want to remove and click < Remove > A confirmation box appears

2.3 Time Slot Routing

The DXC allows you to program the routing of the individual time slots. Programming cannot be performed when no communication with the agent exists without disrupting the service of time slots that are not rerouted. Time slots can be configured in two modes:

- **Bidirectional** (TS Assignment is symmetrical)
- **Unidirectional** (TS Assignment is not symmetrical).

The routing capabilities depend on the port type:

- For connections between E1, T1 or HDSL ports, you can program the routing of each individual time slot to any other E1, T1 or HDSL port.
- To expedite the routing, a sequential “group” routing mode is also available. One “group” (group of time slots, identified by the starting time slot number and the total number of time slots) can be routed to the required destination port, and inserted in the destination frame. You can also specify the starting time slot in the destination frame.
- For high-speed data ports, your data stream can be connected to any E1 or T1 port as well as to another DHS port. In this case, the data stream must be sequential for routing to several ports. You can either select the destination

time slots for your data individually, or specify a “group” routing mode. DHS ports support the following “group” routing modes:

- All routing mode, in which all of the port's available time slots may be connected. Destination TS = 1.
- Sequential routing mode.
- Alternate routing mode. The group time slots are inserted in alternate time slots of the destination frame, starting with a specified time slot.

Time slot connections can be programmed at two different levels:

- At the Port level, you can connect/disconnect all TSs or connect a group of TSs in a port-to-port connection
- At the TS level, you can connect/disconnect individual TSs.

Time Slot Assignment Window - Port Level

The TS Port level is the initial entry level of the time slot assignment function. It provides a global view of the DXC's TS connections.

➤ **To display the Port level TS Assignment window:**

1. In the Edit Configuration Mode, ensure that no card is selected.
2. From the **Configuration** menu, select **TS Assignment**.

The Matrix Mode dialog box appears ([Figure 2-6](#)).

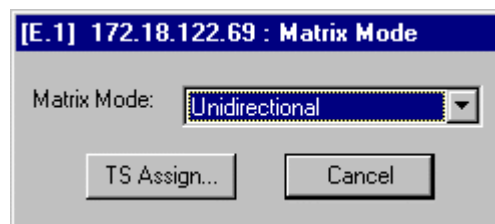


Figure 2-6. Matrix Mode Dialog Box

3. Select the desired mode, **Bidirectional** or **Unidirectional**, and click **<TS Assign...>**

The TS Assignment window appears, displaying the existing TS connections at port level. In this window, you can define time slot connections for the DXC's ports.

Unidirectional Matrix Mode

When **Unidirectional** is selected from the Matrix Mode dialog box, the following dialog box appears:

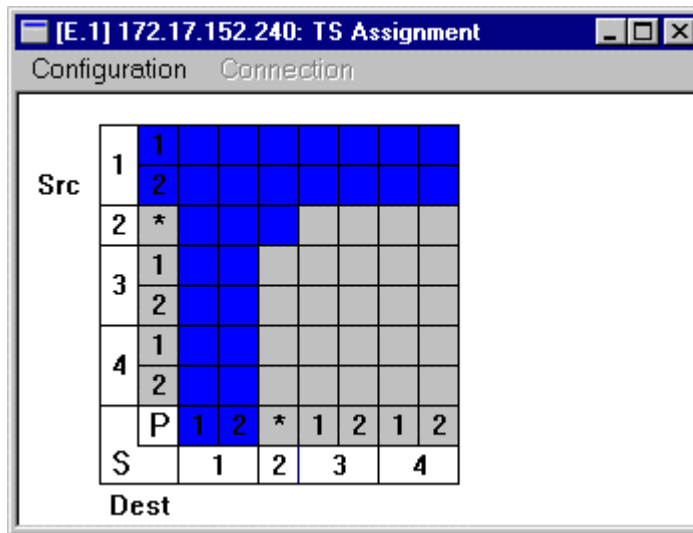


Figure 2-7. TS Assignment Dialog Box (Unidirectional)

The TS assignment shown is not symmetrical. This means that while A transmits to B, B does not necessarily transmit to A. B may transmit to another port, or it may not transmit at all.

Bidirectional Matrix Mode

A sample TS Assignment window in Bidirectional matrix mode is shown on the following page. The TS assignment shown is symmetrical, i.e., A transmits to B, and B transmits to A.

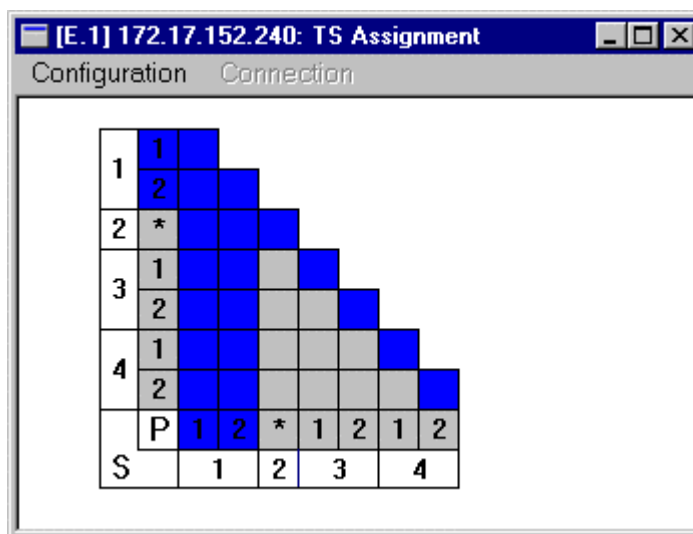


Figure 2-8. TS Assignment Window (Bidirectional) Port Level

A triangular grid displays the time slot assignments. A port is denoted by a cell containing a number (port indicator cell). Each row and each column represents the possible connections of a specific port on a card in a specific IO slot. Each

connection cell represents the connection between its corresponding row port and column port.

TS Color Codes

Colors, letters and guides indicate information about the time slots and ports represented in the grid. Their meanings are described in the following sections.

Both connection cells and port indicator cells use color codes to relay connection information.



Gray empty

Represents cells whose ports can have TS connections, but which currently do not have TS connections at any level.



Gray + number

Port is available for TS connection, but currently has no TS connection. Port can have TS type=Mng or Reserved.



Gray + X

Represents cells at an intermediate stage whose TS connections are about to be defined at port level



Yellow + letter

Cell's ports have at least one, but not every, connectable TS connection. The remaining TSs may be connected to another port, or not connected at all.



Yellow + number

The port has TS connections, but also has TSs that are not connected at all. The port's color must be the same in both its row and column.



Green + letter

All connectable TSs in this cell's ports are connected.



Green + number

All connectable TSs in this port are connected (some TSs may be connected to one port and other TSs to other ports including Mng or Reserved TS). The port's color must be the same in both its row (Src) and column (Dest).

Note



If all TSs in one port are connected (for example, 25 TSs), and only some of the TSs in the opposite port are corrected (for example, it has 31 TSs), the cell appears in two colors. The side with all TSs connected is green and the side with partial TS connection is yellow.



Blue empty

Cell's ports have no TS connections and TS cannot be connected. For example:

A cell representing DHS card ports without a connected TS, and whose Data Rate = 0, is always blue

A cell representing a cross between two different data rates, is always blue

TS 16 is blue for E1-MF and E1-CRC-MF cards.

1 Blue + number

Port has no TS connections and cannot be TS connected.

R Blue + R

TS is Reserved but not connected.

D Red + letter

Cell's ports have at least one invalid TS connection, that is, a connection that is not permitted, missing, or of the wrong type.

1 Red + number

Port has at least one invalid TS connection, indicating one of the following:

One of the port's TSs is connected when it should not be

HS port's Data Rate = $nx56$ or $nx64$, where $n > 0$, but no TS is connected, or the number of connected TSs does not equal n .

2 Orange + number

TS is Reserved (TS Type=Reserved). If all TS are Reserved or Reserved and Mng (no free TS).

TS Letter Codes

The connection cells use letter codes to describe the type of connected time slot. When all of a cell's connected TSs are of the same type, one of the following letters appears in the cell:

V	Voice
D	Data
P	VCMP
R	Reserved

If a cell has more than one type of TS connection, the following letter appears in the cell:

M Mixed. The connected TSs are not of the same type.

Port Guides

The guides highlight the exact source port cell and destination port cell of the cell selected by the cursor. This enables you to easily identify the connected ports. A bold border surrounds the indicated cells.



Figure 2-9. Port Guides

A selected cell is surrounded by a blue frame. The TS guides remain fixed on the selected cell's row and column, even if you move the cursor elsewhere on the screen. The guides will move to other coordinates only if you select another cell.

Time Slot Assignment Operations - Port Level

At the port level, you can do the following:

- Connect all, a sequential group, or an alternating group of TSs
 - See which ports have TS connections
 - Zoom into the TS level to display individual TS connections.
- **To display the port's type:**
- Position the cursor over a port indicator cell.

The port type appears.

Src	1	1								
		HS								
	2	*								
	3	1								
		2								
4	1									
	2									
	P	1	2	*	1	2	1	2		
Dest		1	2	3	4					

Figure 2-10. Viewing Port Type

- **To create a new TS connection:**
- Click an empty gray cell. From the **Connection** menu, select **Mark** or **Clear**.
- or
- Position the cursor over an empty cell and click the middle mouse button.

An X appears inside the cell but the cell remains gray. This indicates a connection at the port level but the time slots of the ports have not been assigned yet.

- **To disconnect a TS connection in a gray cell:**
1. Click a gray cell containing an X.

- From the **Connection** menu, select **Mark** or **Clear**, or position the cursor over an empty cell and click the middle mouse button.

The cell is empty but remains gray. This indicates that the cell's ports have no TS connection but their TSs are connectable.

Connecting All Time Slots

You may connect all connectable time slots of the same type between the two cell's ports.

➤ **To connect all of a cell's connectable time slots:**

- In the grid, select a marked (TS-connected) connection cell.
- From the **Connection** menu, select **Group**.

The Group Connection dialog box appears ([Figure 2-11](#)). The top section shows the port numbers of the selected cell and the types of ports.

Note The Group Connection dialog box at the port level is identical to the Group Connection dialog box at the TS level.

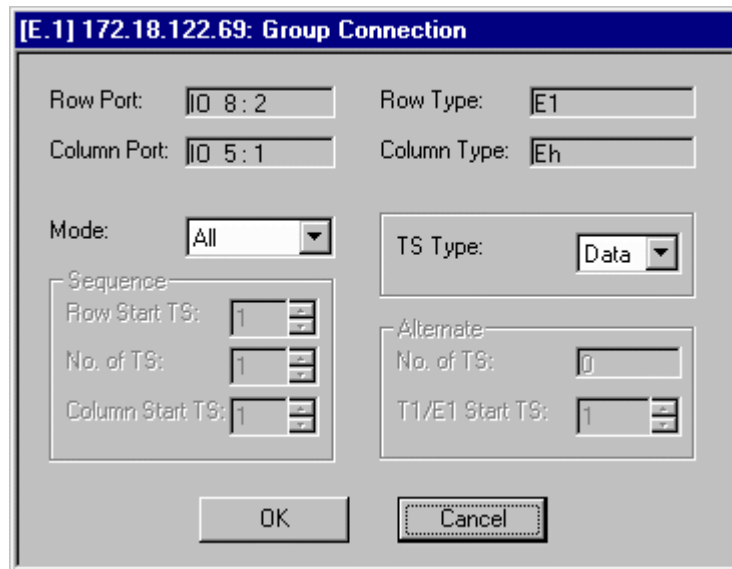


Figure 2-11. Group Connection Dialog Box

- Select **All** as the Mode.
- If necessary, select the **TS Type**. The available options are **Voice**, **Data** or **VCMP**.
- Click **<OK>**.

The system will perform a series of checks. If it detects at least one existing TS connection, it will display the message, **"This operation will cause disconnection of existing TS connections"**.

- Click **<OK>** to overwrite any previously existing connections with the new connection setup. The possible TS assignments vary depending on the cell port types.

Connecting a Sequence of Time Slots

► To connect a sequence of time slots:

1. Select a marked (TS-connected) cell in the grid.
2. From the **Connection** menu, select **Group**.

The Group Connection dialog box appears (Figure 2-11).

3. Select **Sequence** as the Mode.

This enables the Sequence fields in the Group Connection dialog box.

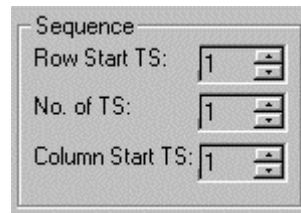


Figure 2-12. Sequence Fields

4. Choose the appropriate sequence values.
5. Click <OK> to implement the TS connections in the defined sequence.

The system checks for existing TS connections. If it detects at least one, the message, "**This operation will cause disconnection of existing TS connections**", appears. Click <Yes> to continue.

Note For a list of TS connections that are performed by the Connect Sequence operation see Group TS Assignments.

Table 2-7. Sequence Field Parameters

Parameter	Possible Values / Remarks
Row Start TS	First TS in the sequence to be connected T1: 1 to Fbit E1: 1 to 31 HS: 1
No. of TS	Number of TSs to be connected in the sequence. The maximum number varies according to the port type and line type of the row port, as outlined in the column to the left T1: 1 to (25 - Row Start TS) E1 or E1-CRC: 1 to (32 - Row Start TS) E1-MF or E1-CRC-MF: 1 to (16 - Row Start TS) if the Row Start TS is less than 16 1 to (32 - Row Start TS) if the Row Start TS is greater than 16 0 if the Row Start TS is 16. HS: The number of possible connections equals n where n is the number of configured active time slots in the port's data rate formula ($nx56$ or $nx64$).

Column Start TS	T1: The first TS is in the range of 1 to (25- Row Start TS). E1 or E1-CRC: The first TS is in the range of 1 to (32 - Row Start TS). E1-MF or E1-CRC-MF: The first TS is in the range of: 1 to (16 - Row Start TS) if the Row Start TS is less than 16 17 to (32 - Row Start TS) if the Row Start TS is greater than 16.
-----------------	---

Connecting Alternate Time Slots

The Alternate mode allows you to connect TSs from an HS port to alternating TSs in a T1/E1 port.

- For T1/E1 ports, the group's TSs are sorted on an odd/even basis [4,6,8,...2(1+n)]
- For HS ports, the group's TSs are sorted sequentially (1,2,3,...n).

The Alternate fields are enabled if one of the cell's ports is HS type, and one of the following conditions exist:

- If the cell's other port is T1 type and the number of configured active time slots (n in the formula, $nx56$ or $nx64$ = data rate) is less than 13
- If the cell's other port is E1 type and the number of configured active time slots is less than 16.

► To connect alternating time slots:

- Select a marked (TS-connected) cell in the grid.
- From the **Connection** menu, select **Group**.

The Group Connection dialog box appears ([Figure 2-11](#)).

- Select **Alternate** as the mode.

This enables the Alternate fields in the dialog box.

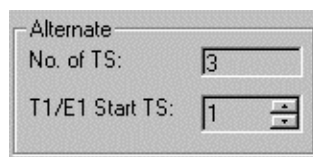


Figure 2-13. Alternate Mode

- Click **<OK>** in the Group Connection dialog box ([Figure 2-11](#)).

The system checks for existing TS connections. If it detects at least one, the message, "**This operation will cause disconnection of existing TS connections**", appears. Click **<Yes>** to continue.

Table 2-8. Alternate Mode Parameters

Parameter	Possible Values / Remarks
No. of TS	Number of configured active time slots (n in the formula, $nx56$ or $nx64$ = data rate)
T1/E1 Start TS	First time slot of the T1/E1 port which is connected to TS1 of the HS port. The available options depend on the number of needed active time slots (n)

T1: **1** to **[27 - (2n)]**, where $1 \leq n \leq 13$.

E1 or E1-CRC: **1** to **[33 - (2n)]**, where $1 \leq n \leq 16$.

E1-MF or E1-CRC-MF: The starting TS is dependent on the data rate ($n \times 56$ or $n \times 64$):

If $1 \leq n \leq 7$, the starting TS is **1** to **[17 - (2n)]** or **[33 - (2n)]**

If $n = 8$, the starting TS is **1** or **17**

If $9 \leq n \leq 16$, the starting TS is **1,3,5,7...[33 - (2n)]**.

Disconnecting Time Slot Connections

You can disconnect all the defined time slot connections between two ports.

► To disconnect all time slots in a cell:

1. Click the cell whose time slots you want to disconnect.
2. From the **Connection** menu, select **Clear TSs**.
The message, "**Disconnecting all the cell's TS connections**", appears.
3. Click **<OK>** to continue.
The cell's color changes to gray or blue, in accordance with the new state.
The color of the respective port indication cells may also change.

Resetting All TS Assignments

► To reset all TS assignments:

- With no slot selected, from the **Configuration** menu, select **Reset All TSs**.
The following message appears, "**Removing all TS connections**."

Resetting TS User Info

► To remove user info for all TS connections:

- With no slot selected, from the **Configuration** menu, select **Reset TSs User Info**.
The following message appears, "**Removing User Info of All TSs** "

Zooming to TS Level

From the port level grid, you can select a port connection and zoom into the TS level.

The TS level is a grid that displays all possible time slots in a TS connection between ports. In the TS level, you can do the following:

- Define single TS connections between the two ports, including connections that already exist and new connections.
- Disconnect existing TS connections.

► To display the TS Level grid:

1. Click a cell containing a letter or a cell marked with an "X".
2. From the **Connection** menu, select **Zoom** or double-click a cell containing a letter or marked with an "X".

The TS Level window appears.

Zooming in on Ports with Letters Connected to a "*"

When zooming in on a cell having a letter inside that is connected to a "*" opens an additional mid-level window. This mid-level window displays the connections that the "*" represents. These connections are T1/E1 or U ports.

-
- Notes**
- When the cell connects a port of a D4T1, D4E1, D8T1, D8E1, D8U, D16U, a tabular dialog box is displayed.*
 - When connecting two T1/E1 ports, both should have the same Link Mode value.*
 - When connecting a T1/E1 port having Link Mode=Transparent (full), all connectable TSs of these ports should be connected. They should be connected so that the same TS is connected in each one: 1-1, 2-2, 3-3, ...24-24...or 31-31.*
 - If Dest Port is a T1/E1 port with Link Mode=Regular and Src Slot type is T1/E1, the ports with Link Mode=Transparent will not be selectable.*
 - If Dest Port is a DHS or U port and Src Slot type is T1/E1, the ports with Link Mode=Transparent will not be selectable.*
 - An Src Port that is an external-x U port with Interface=LT-1 and Hs Rate=NC (0) will not be selectable.*
 - A Src Port that is an external-x/B1 or external-x/B2 U port with Interface≠LT-1 and HS Rate=NC 0) will not be selectable.*
 - If Dest Port is an external-x, external-x/B1 or external-x/B2 U port and the Src Slot contains a U card, internal-x ports will not be selectable.*
 - If Dest Port is an internal-x U port and the Src Slot contains a U card, external-x, external-x/B1 or external-x/B2 ports will not be selectable.*
 - If Dest Slot=Src Slot and they contain a U card, when Dest Port is an internal-x port, other internal-y ports will not be selectable.*
 - If Dest Port is an internal-x, external-x/B1 or external-x/B2 U port and the Src Slot contains a DHS card, if the Src Port has Rate=nx56 Kbps it is not selectable.*
 - If Dest Port is of a DHS card and it has Rate=nx56 Kbps, internal-x, external-x/B1 and external-x/B2 U ports will not be selectable.*
 - If Dest Port is an external-x U Port AND Src Port is a DHS port, the Src Port will be selectable only if for the U external port, Interface=LT-1 and the Rate of the U port and HS port are the same. 56 kbps and 64 kbps are considered different.*
 - If Dest Port is a DHS port and Src Slot contains a U card, an external-x U Port will be selectable only if for the U external port, Interface=LT-1 and the Rate of the U port and HS port are the same.*
 - If Dest Slot contains a U card AND Src Port is a DHS port, the Src Port will not be selectable if it has Rate= nx64 where n>2, or nx56 where n>1.*
 - If Dest Port is a DHS port that has HS Rate= nx64 where n>2, or nx56 where n>1 and Src Slot contains a U card, only None will be selectable.*
 - If Dest Slot=Src Slot and they contain a U card, when Dest Port is an external-x/B1 port, external-x/B2 port (of the same external port = x) will not be selectable.*
-

- Notes**
- A TS connection can only be established between an internal port of a T3/E3 card and another card, which is not a T3/E3 card.*
 - A T3/E3 card cannot have TS connections to another internal port of the same card, or to itself.*
 - TS connections are not supported between two T3 cards or two E3 cards. T3/E3 cards do not support asymmetric Time Slot Assignments for matrix mode = Unidirectional.*
 - From the mid-level window, T3/E3 TS connections are performed in the same manner as TS connections previously described for T1/E1 ports.*
 - External U ports with Interface=LT-1 and Rate=NC cannot be connected to any other port.*
 - External U ports with Interface=LT-1 and Rate=NC for both B1 and B2 ports cannot be connected to any other port.*
 - If both sides of the window contain a "*" U port, an internal port cannot be connected to itself.*
 - If both sides of the window contain the same "*" U port, no port can be connected to itself.*

Global TS Assignment Configuration Operations

You can save TS assignment changes, or reset the TS connections, only if no connection cells are selected. The **Configuration** menu is disabled if a connection cell is selected.

- **To save changes to the TS Assignment window:**
 1. If a cell is selected, click outside the grid to deselect the cell.
 2. From the **Configuration** menu, select **Save**.
- **To disconnect and reset all of the time slot connections in the window:**
 1. If a cell is selected, click outside the grid to deselect the cell.
 2. From the **Configuration** menu, select **Reset All**.
 - The message, "**Removing all TS connections**", appears.
 3. Click **<OK>** to confirm.
 - All existing time slot connections in the selected port are disconnected.
 4. To save the reset time slot assignments, select **save** from the **Configuration** menu.

Time Slot Assignment Window - TS Level

From the port level grid, you can select a port connection and zoom into the TS level.

The TS level is a grid that displays all possible time slots in a TS connection between ports. In the TS level, you can do the following:

- Define single TS connections between the two ports, including connections that already exist and new connections
- Disconnect existing TS connections.

► To display the TS Level TS Assignment window:

1. In the Port TS Assignment window, click a connection cell that contains an X or a letter code.
2. From the **Connection** menu, select **Zoom** or double-click the cell that you want to zoom into.

The TS Level window appears ([Figure 2-14](#)).

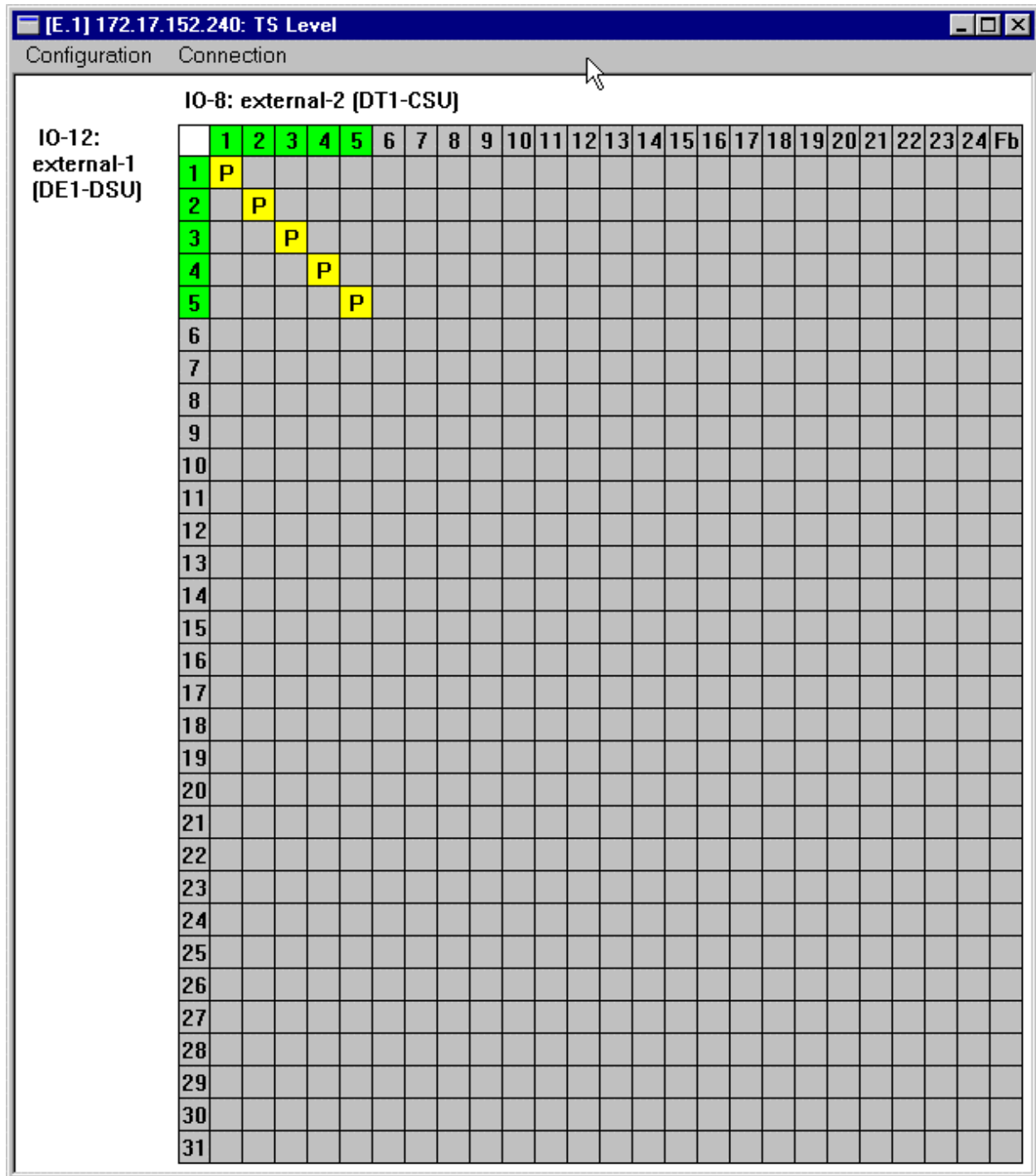


Figure 2-14. TS Assignments TS Level

A grid displays the time slot assignments. A TS is denoted by a cell containing a number (TS indicator cell). Each row and column represents the possible connections of a specific TS on a port in a specific card. Each connection cell represents the connection between its corresponding row TS and column TS.

The number of TSs on each side of the grid depends on the type of port:

T1 25 TSs (TS 25 is the Fbit.)

E1 31 TSs

HS Number of configured active time slots “n” in the ports rate field.

Colors, letters and guides indicate information about the time slots represented in the grid. Their meanings are described on the following page.

TS Color Codes

Both connection cells and TS indicator cells use color codes to relay connection information in bidirectional mode.



Gray empty

Available for TS connection, but currently not connected (for connection cell).



Gray + number

TS is available for connection, but currently is not connected (for indicator cell).



Yellow + letter

TS connection established (for connection cell).



White + number

TS is dedicated to management. It cannot be connected to another port (for indicator cell).



Green + number

The TS is connected to the corresponding TS in the grid (for indicator cell).



Dark Green + number

TS is connected to a TS of another port not represented in this grid (for indicator cell).



Blue empty

Connection cell is not connected and cannot be connected.



Blue + number

TS is not connected and cannot be connected (for indicator cell).



Blue + R

TS is Reserved but not connected.

D Red + letter

Invalid TS connection e.g., connection that is not permitted or of the wrong type (for connection cell).

2 Red + number

TS has an invalid connection (for indicator cell). This usually indicates one of the following:

- The TS is connected when it is not connectable
- TS is not connected but it should be connected. Applicable to HS ports.

2 Orange + number

TS is Reserved (TS Type=reserved).

TS Letter Codes

The connection cells use letter codes to describe the type of TS connection.

V	Voice
D	Data
P	VCMP
R	Reserved

TS Guides

The guides highlight the exact row TS and column TS of the cell pointed to by the cursor. This enables you to identify the connected TSs more easily. A bold border surrounds the respective row and column TS indicator cells.



Figure 2-15. TS Guides

A selected cell is surrounded by a blue frame. The TS guides remain fixed on the selected cell's row and column, if a cell was selected, even if you move the cursor elsewhere on the screen. The guides will move to other "coordinates" only if you select another cell.

Time Slot Assignment Operations - TS Level [Bi-directional]

At the TS level, you can do the following:

- Connect/disconnect individual TSs, all TSs, a sequential group or an alternating group
- View the selected port's individual TS connections.

Grid Cell Operations: Connecting/Disconnecting Time Slots

The procedures for Connecting/Disconnecting Time Slots at the TS Level is the same as those described in the [Time Slot Assignment Operations - Port Level](#) section.

Viewing TS Connections to Other Ports

If at least one TS indicator cell is dark green, TS connection to another port exists.

► To view connections between all TSs that have connections to another port:

1. Click on the outside border of the grid.
2. From the **Connection** menu, select **Other Ports**.

The Other Ports dialog box appears ([Figure 2-16](#)).

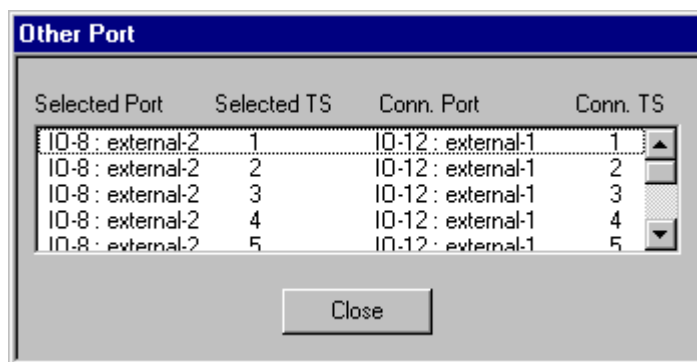


Figure 2-16. Other Ports Dialog Box

Table 2-9. Other Ports Parameters

Parameter	Remarks
Selected Port	IO slot and port of the selected TS. For example, 15 : 1 .
Selected TS	Number of the selected TS. For example, 30 .
Conn. Port	IO slot and port of the other port to which the TS is connected. For example, 3:2 .
Conn. TS	Number of the TS in the other port to which the TS is connected. For example, 22 .

Disconnecting TS Connections

You can disconnect individual TS connections or all TS connections in the selected port.

► To disconnect an individual TS connection:

- Select a connection cell representing a TS connection (yellow or red), then from the **Connection** menu, select **Disconnect**.

OR

- Click the mouse's right button and select Disconnect.

OR

- Using the mouse's middle button, click a yellow or red cell until the cell becomes gray.

The gray color indicates that the cell's ports have no TS connection but their TSs are connectable. If the cell becomes blue, TS connection is impossible between the two corresponding ports.

➤ **To disconnect all TS connections on the grid:**

1. Ensure that no TS connection cell is selected.
2. From the **Connection** menu, select **Clear TSs**.

The message, "**Disconnecting all the cell's TS connections.**" appears.

3. Click **<OK>** to continue.

All existing TS connections in the port, *except TS connections to other ports*, are deleted. In addition, the selected cell in the port view will be empty and colored gray.

Exiting the TS Assignment Window

➤ **To exit the TS Assignment window:**

1. Double-click the control box in the upper left corner of the window.
If no change was made while this window was open, the window closes. If a change was made, the message, "**Save window changes?**" appears.
2. Click **Yes** to save the TS changes, or click **No** to close the window without saving any changes.
Gray cells marked by an X will not be saved because their TS connections were not detailed.

2.4 Edit Configuration Fault Operations

Displaying Sanity Check Results

When the Edit Configuration mode is selected, you can display the results of the DXC's last sanity check.

To view the results of the last agent sanity check:

- From the **Fault** menu select **Sanity Check Errors...**
- If the Edit Configuration does not contain error(s) or warning(s), the message **No Sanity Errors** appears.
- If the sanity check detects error(s) or warning situations, the Sanity Check Errors List and/or Warning List appears on the screen. Errors appear first in the list, followed by warnings. If necessary, click the scroll bar and scroll arrows to view the additional entries.

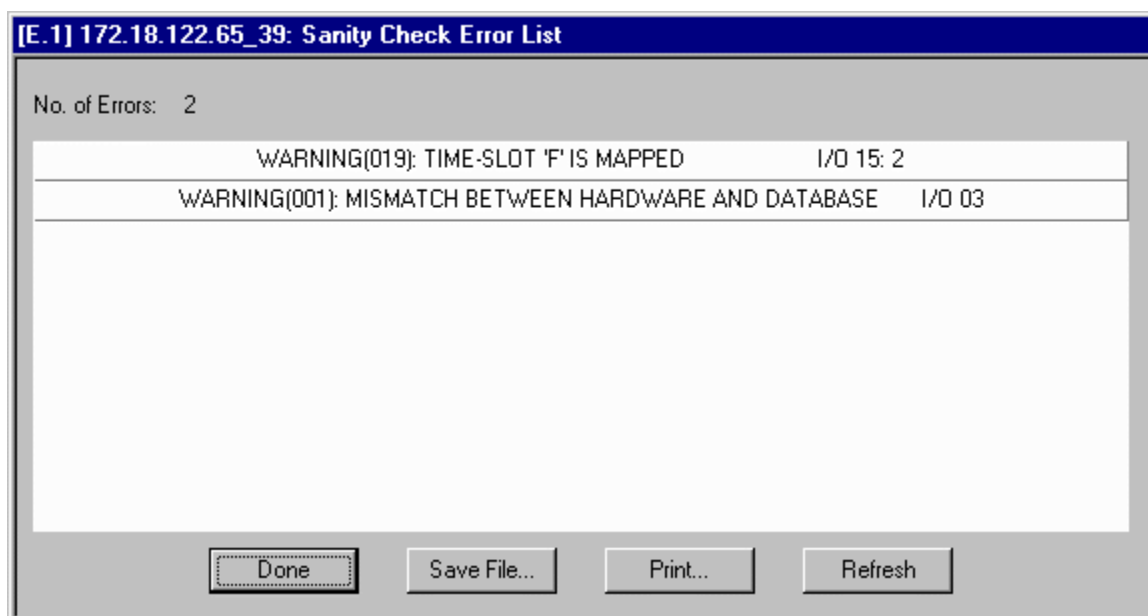


Figure 2-17. Sanity Check Error List

2.5 Displaying the Agent View

If the Edit Configuration only is displayed on the screen, you may open the Agent view (if the agent is connected).

► **To open the agent part of the application window:**

- From the **Window** menu, select **Agent View** followed by **On**.

The actual agent configuration appears below the Edit Configuration window.

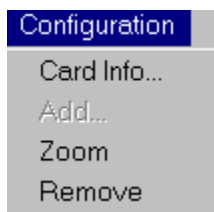
2.6 Edit Configuration Card View Operations

[Table 2-10](#) lists the different management options for the card level.

Note Card Level Configuration menu options are dependent upon the selected card.

Table 2-10. Card Level Management Options

Tasks - Configuration	Dialog Box and Parameter Location	Path
Adding a new card	New Card dialog box (Figure 2-18)	Configuration ➡Add...
Removing a card	See Removing a Card	Configuration ➡Remove
Displaying zoomed card view	Zoomed Card View (Figure 2-19)	Configuration ➡Zoom



Configuration	Displaying card information	Card Information dialog box (Figure 2-20)	Configuration ➡Card Info...
Card Info...			
BERT Parameters...	Configuring BERT Parameters	BERT Parameters Dialog Box (Figure 2-21)	Configuration ➡BERT Parameters...
Add...			
Zoom			
Remove			

➤ **To select a card:**

- Click the desired card in the Edit Configuration View.

The selected card is outlined by a light blue frame.

Adding a New Card

You may program a new card in an empty slot in the Edit Configuration.

➤ **To add a new card to the Edit Configuration:**

- Select an empty slot.
- From the **Configuration** menu, select **Add...**

The New Card dialog box appears ([Figure 2-18](#)).

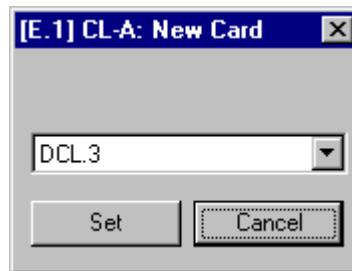


Figure 2-18. Add New Card

- From the List box, select the required card type. Not all cards are available for all devices. [Table 2-11](#) lists all the supported cards.

Table 2-11. Supported Cards

Parameter	Possible Values / Remarks
Card Type	Unknown, PS-AC, PS-DC, DLC.2, DLC.2-ETH, DLC.3, DLC.3-ETH, DE1-DSU, DE1-LTU, DE1/F, DE1-HDSL, DE1-HDSL/S, DE3, DE3/F, D4E1, D8E1, DHS, DIM-V35, DIM-RS422, DIM-RS530, DIM-HSSI, DIM-X21, DIM-10BaseT, DIM-E1, DT1-CSU, DT1-DSU, DT1/F, DT1-HDSL, DT1-HDSL/S, DT3, DT3/F, DT3/G747, D4T1, D8T1, D8U, D16U, DSTM-1 (Frac.), DSTM-1/R (Frac.)

Note Slots 1 and 2 can only contain PS cards.
 The DXC-8R uses PS-DC. All other DXCs use PS-AC.
 Slots 3 and 4 can only contain **DCL** cards.
 Slots 5 to 19 can accept all other types of cards.
 The DXC can support only one E3/T3 card without redundancy, or two E3/T3 cards with redundancy.
 For DXC-10A, slot 1 contains an AC PS card; slot 2 contains a DCL card. Slots 3 to 7 are programmable. Slot 3 (IO-1) can be only be programmed with a single card. Slots 4 to 7 (IO-2..IO-5) can be programmed with single cards or double ones. However, when a double HDSL card is chosen, both slots in the following pairs (IO-2 & IO-3, IO-4 & IO-5) must be empty.
 For DXC-8R, slots 1 and 2 contain built-in PS-DC cards. Slots 3 to 6 (IO-1 to IO-4) are programmable with single cards or double ones. However, when a double HDSL card is chosen, both slots in the following pairs (IO-1 & IO-2, IO-3 & IO-4) must be empty.
 For DXC 30, when a double HDSL card is chosen for insertion in a certain slot, the next sequential slot must also be empty.
 There are two types of DIM Ethernet cards, DIM-10BaseT (UTP connector) and DIM-ETB (BNC connector-10Base2). The agent will display the DIM-10BaseT panel for both cards.

Removing a Card

You may remove a card from the Edit Configuration. All information about a removed card will be deleted.

Note A card cannot be removed if it is being used by the Path Management Application.

► To remove a card from the Edit Configuration:

4. In the Edit Configuration window, click the card you want to remove.
5. From the **Configuration** menu, select **Remove**.
 The message “All information about removed card will be lost” appears.
6. Click <OK> to confirm the card’s removal, or **Cancel** to close the dialog box without making any changes to the Edit Configuration.

Zooming to Card View

You may display a more detailed view of the cards, including individual ports.

Note You cannot zoom in on PS cards (1,2), empty slots, unknown cards and offline DCL cards.

► To open the card view of a specific card:

- Select a card in Edit Configuration Mode and from the **Configuration** menu, select **Zoom** or double-click the card.

The selected card's Zoom is displayed (*Figure 2-19*).

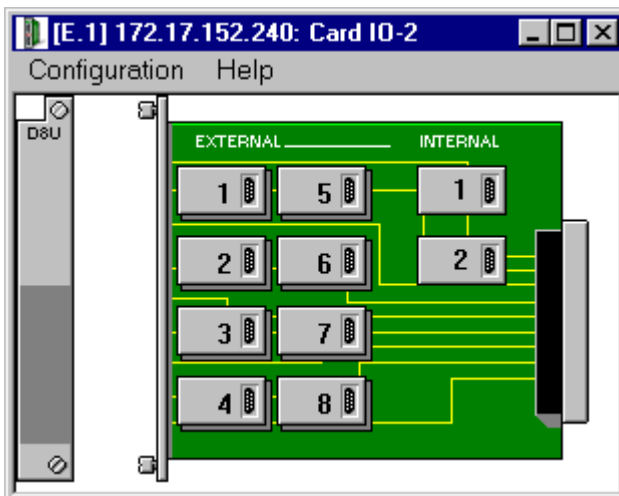


Figure 2-19. Sample Zoomed Card

➤ **To close the Card View:**

- Double-click the upper-left hand corner of the Card View window.

Displaying Card Information

➤ **To display card information:**

- From the **Configuration** menu, select **Card Info**.

The Card Information dialog box appears. All information in this dialog box is read-only.

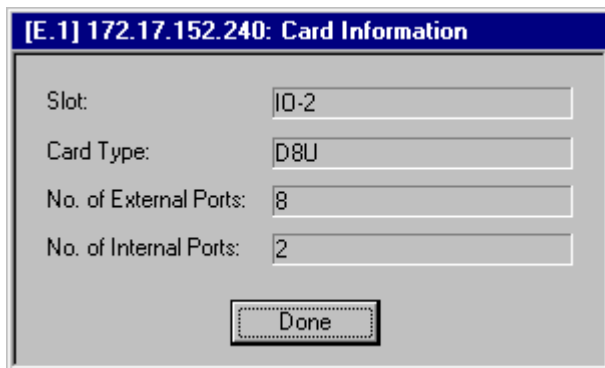


Figure 2-20. Card Information Dialog Box

BERT Parameters

BERT parameters can be configured from card view.

Note At card level, BERT Parameters are only available for D8U and D16U cards.

- From the Card View's **Configuration** menu, select **BERT Parameters...**

The Card BERT Parameters dialog box appears ([Figure 2-21](#)).

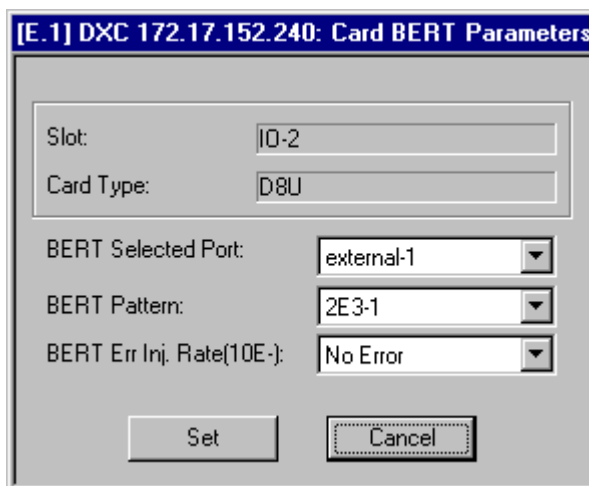


Figure 2-21. BERT Parameters Dialog Box

Table 2-12. BERT Parameters

Parameter	Possible Values / Remarks
BERT Selected Port	None, External-x, External-x/B1, External-x/B2, External-x/D where x =: 1..8 for D8U, 1..16 for D16U External-X is available only when Interface=LT-1. External-X/B1, External-X/B2, External-X/D is available only when Interface≠LT-1.
BERT Pattern	2E3-1, 2E4-1, 2E5-1, 2E6-1, 2E7-1, 511, 2E10-1, 2047, 2E17-1, 2E18-1, QRSS, 2E21-1, 2E22-1, 2E25-1, 2E28-1, 2E29-1, 2E31-1 and 2E32-1.
BERT Error Inject Rate (10E-)	The rate of BERT injection No Error, 1, 2, 3, 4, 5, 6, 7.

2.7 Edit Configuration Port Operations

From the Card View, you may view or change configuration parameters and information about the card's individual ports. In the Edit Configuration window, selecting a port enables you to display software configuration information about the selected port.

► To select a port:

- Select a port by clicking it.

A selected port is outlined by a blue frame.

Displaying Port Information (Software Configuration)

The **Port Info** command enables you to view and edit software configuration information of the selected port.

- **To view or edit the software configuration for a specific port:**
 - Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Software Configuration...**

The Software Configuration dialog box appears.

The Port Information dialog box consists of two parts. The upper part is common to all types of cards and contains read-only information:

The information presented in the second part of the Port Information dialog box depends on the type of port selected. The following pages include the dialog boxes and explanations of the software configuration parameters for the different cards.

DCL.3, DCL.3-ETH, DCL.2, DCL.2-ETH Software Configuration

Note *DCL.3 cards are supported by Agent versions ≥ 7.00 .
DCL.2 cards are supported by Agent versions < 7.00 .*

- **To display the software configuration of a DCL external port:**
 1. In the Edit Configuration Mode, double-click the active DCL card.
 2. Select Port 1 (SP - Supervisory Port) or Port 2 (NP or ETH).
 3. **Configuration** menu, select **Port Info** or click the **Port Info** button .

The Port Information dialog box appears ([Figure 2-22](#)).

The dialog box is titled "[E.1] 172.17.152.240: Port Information". It contains two main sections: "Port Information" and "SW Cfg".

Port Information:

- Slot: CL-A
- Port: SP
- Card Type: DCL.3

SW Cfg:

- Usage: NMS Slip
- Routing Protocol: Proprietary
- Rate(bps): 9600
- Data Bits: 8
- Parity: None
- Interface: DCE
- CTS: =RTS
- DCD Delay(msec): 0
- DSR: On

Buttons: Set, Cancel

Figure 2-22. DCL SP Software Configuration Dialog Box

Table 2-13. DCL Port 1 (SP) SW Cfg Tab Parameters

Parameter	Possible Values / Remarks
Usage	Function of the selected port NMS Slip , NMS PPP , Terminal , Agent Slip and Agent PPP
Routing Protocol	Protocol used for routing information from this port Proprietary , RIP2 , None
Rate (bps)	Operational speed, in bps, of the selected port. Auto indicates that the speed rate is selected by the DXC Auto , 300 , 1200 , 2400 , 4800 , 9600 , 19200 , 38400 , 57600
Data Bits	Number of data bits in the word format transmitted through the selected port 7 , 8
Parity	Parity mode used by the selected port None , Odd , Even .
Interface	DCE , DTE
CTS	State of the CTS (Clear to Send) line in the selected port On - CTS is always on =RTS - CTS line follows the local RTS line

DCD Delay (msec)	Time delay between Data Carrier Detection (DCD) and the sending of the data For interface type DTE: 0, 10, 50, 100, 200 and 300 For interface type DCE: 0
DSR	State of the DSR line On - DSR line is continuously on. Only applicable if Interface = DCE =DTR - DSR line tracks the DTR line. Only applicable if Interface = DTE On, =DTR

[E.1] 172.17.152.240: Port Information

Slot: CL-A

Port: NP

Card Type: DCL.3

SW Cfg

Usage: Dial Out

Routing Protocol: NA

Rate(bps): 9600

Data Bits: 8

Parity: None

Call Out Mode: None

Dial Retries: 0

Wait for Connect(sec): 30

Dial Mode: Tone

Alternate No. Use: No

Primary Dial No.:

Alternate Dial No.:

Set Cancel

Figure 2-23. DCL NP Software Configuration Dialog Box

Table 2-14. DCL Port 2 (NP) SW Cfg Tab Parameters

Parameter	Possible Values / Remarks
Usage	Function of the selected port Dial-Out, <u>NMS Slip</u>, NMS PPP, Agent Slip, Agent PPP
Routing Protocol	Protocol used for routing information from this port Proprietary, RIP2, <u>None</u> When Usage=Dial Out this parameter is NA
Rate	Operational speed, in bps, of the selected port 300, 1200, 2400, 4800, <u>9600</u>, 19200, 38400, 57600
Data Bits	Number of data bits in the word format transmitted through the selected port 7, <u>8</u>
Parity	Parity mode used by the selected port <u>None</u>, Odd, Even.
The following parameter are available for the DCL.2 card only when Usage=Dial Out.	
Call Out Mode	Indicates when the DXC will initiate a call <u>None</u> - Call-out is disabled All - DXC initiates a call after each new alarm Major - DXC initiates a call when a new major alarm occurs
Dial Retries	Maximum number of retries to initiate a call <u>0</u> through 8
Wait for Connect (sec)	Time required, in seconds, for connection when the DXC initiates a call <u>30</u>, 45, 60
Dial Mode	Type of dialing <u>Tone</u>, Pulse
Alternate No. Use	Indicates if Alternate No. is to be used Yes or No
Primary Dial No.	Number that the DXC dials when it initiates a call The number can have a maximum of 20 characters
Alternate Dial No.	Alternate number that the DXC dials if attempts to dial the Primary Dial Number are unsuccessful This parameter is enabled only if Alternate No. Use is set to Yes. The number can have a maximum of 20 characters

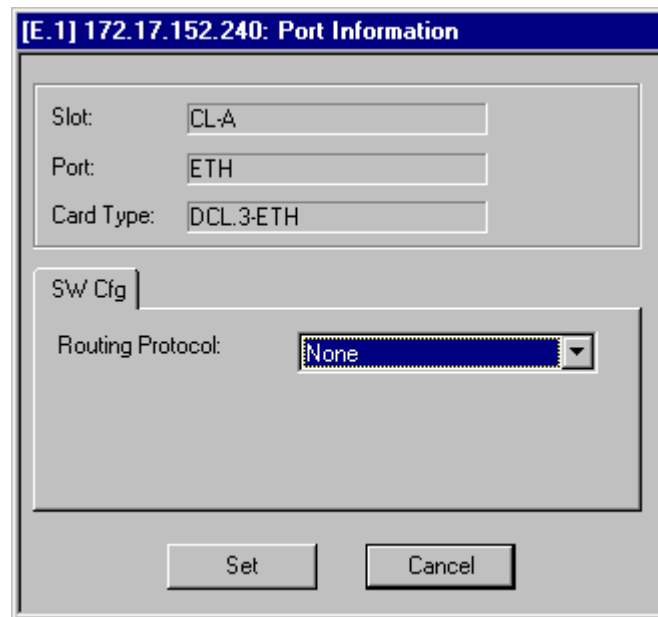


Figure 2-24. DCL ETH Software Configuration Dialog Box

Table 2-15. DCL-ETH SW Cfg Tab Parameters

Parameter	Possible Values / Remarks
Routing Protocol	Protocol used for routing information from this port Proprietary, RIP2, <u>N</u>one

DE1-DSU, DE1-LTU, DE1/F Software Configuration

- To display the software configuration of a DE1 external port:
 - Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-25](#)).

[E. 1] 192.168.200.127: Port Information

Slot:

Port:

Card Type:

SW Cfg> <SW Cfg Rdn Data

Line Type:

Line Code:

Sync:

Link Mode:

Figure 2-25. DE1 Software Configuration Dialog Box

Table 2-16. DE1 SW Cfg> Tab Parameters

Parameter	Possible Values / Remarks
Line Type	Type of E1 line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry E1 - CCITT Rec. G.704 - Table 4a E1-CRC - CCITT Rec. G.704 - Table 4b E1-MF - CCITT Rec. G.704 - Table 4a, with TS16 multiframing enabled E1-CRC-MF - CCITT Rec. G.704 - Table 4b, with TS16 multiframing enabled Unframed - for use when the data being transmitted is unframed
Line Code	Line coding method used for zero suppression. This parameter is read-only HDB3 - High-Density Bipolar 3 coding. Zero strings are restricted to a maximum length of three pulse intervals. Non-zero pulses and intentional bipolar violations are inserted in the data sequence to help the receiving end restore the data
Sync	Reduces the time required for the E1 port to return to normal operation after local loss of synchronization TR-62411 - Complies with AT&T TR-62411 (after 10 seconds) CCITT - Complies with CCITT Rec. G.732 Fast - After 1 second
Link Mode	The Link Mode Regular, Transparent

<SW Cfg Tab

Table 2-17. DE1 <SW Cfg Tab Parameters

Inband Mng	Identifier of inband management over the link If this port is the Destination Port for a DIM card or is designated as the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR for Inband Mng Off, FDL or TS0, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR
Inband Mng Routing Protocol	Protocol used for routing information over the link When Inband Mng=Off, Inband Mng Routing Protocol=None Proprietary, RIP2, None
Dedicated TS	Indicates the dedicated time slot If Inband Mng is Dedicated TS, Dedicated TS/PPP or Dedicated TS/FR the available options are: For Line Types E1 or E1-CRC: 1..31 For Line Types E1-MF or E1-CRC-MF : 1..15, 17..31 Otherwise NA is displayed
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, select the required code in the edit box 00-FF (Default=7E)
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None - Non-transparent mode. When one of the links is in out-of-service state, the time slots carry the appropriate out-of-service code (data/voice OOS) to the other end of the link. Trans - When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state. Full - Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change.
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state. If Line Type=E1 or E1-CRC then the OOS Signal = NA Forced Idle - Signaling bits A and B are busy when the link is in out-of-service state Forced Busy - Signaling bits A and B are idle when the link is in out-of-service state Busy Idle - Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends Idle Busy - Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)

RDN Data Tab

➤ **To view the Redundancy Data:**

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 2-5](#). A message is displayed if no redundancy has been defined for this card.

DT1-CSU, DT1-DSU, DT1/F Software Configuration

➤ **To display the software configuration of a DT1 external port:**

- Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-26](#)).

[E.1] 172.17.152.240: Port Information

Slot: 10-2

Port: external-1

Card Type: DT1-CSU

SW Cfg <SW Cfg Rdn Data

Line Type: ESF

Line Code: B8ZS

Signal Mode: Robbed Bit

FDL: ANSI-T1-403

Sync: TR-62411

Link Mode: Regular

Set Cancel

Figure 2-26. DT1 Software Configuration Dialog Box

Table 2-18. DT1 SW Cfg> Tab Parameters

Parameter	Possible Values / Remarks
Line Type	Type of T1 line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry ESF (Extended Superframe DS1) - 24 frames per multiframe. D4 - (AT&T D4 format DS1) - 12 frames per multiframe. Unframed - for use when the data being transmitted is unframed
Line Code	Line coding method used for zero suppression B7 - B7ZS coding, Jammed Bit zero suppression. A pulse is forced in bit 8 of each 8-bit period of each channel. Therefore, only 7 bits per channel (1.344 Mbps) is available for data <u>B8ZS</u> - B8ZS coding. A specified pattern of normal bits and bipolar variations replaces a sequence of 8 zero bits. This option provides clear channel capability Trans - Transparent (AMI) coding. No zero suppression is present
Signal Mode	Type of signaling transfer mode used by the selected card None, <u>Robbed Bit</u>
FDL	Facility Data Link, allowing supervisory data (such as alarms, error performance, etc.) to be sent through the T1 link. This parameter is only applicable for ESF lines and is read-only ANSI-T1-403 - FDL exchange recommended by ANSI Trans FDL - FDL exchange enabled between the two T1 ports of the same DT1 card
Sync	Reduces the time required for the T1 port to return to normal operation after local loss of synchronization TR-62411 - Complies with AT&T TR-62411 (after 10 seconds) Fast - After 1 second
Link Mode	Indicates the Link Mode Regular, Transparent If Link Mode=Transparent, Inband Mng must be Off.

<SW Cfg Tab

Table 2-19. DT1 <SW Cfg Tab Parameters

Parameter	Possible Values / Remarks
TX Gain Mask (dB)	The selected attenuation value brings your signal level closer to the expected repeater signal level on the cable. This parameter is only applicable for DT1-CSU cards 0, 7.5, 15, 22.5
Inband Mng	Identifier of inband management over the link If this port is the Dest Port of a DIM card, do not select Dedicated TS, Dedicated TS/PPP or Dedicated TS/FR If this port is the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP or Dedicated TS/FR <u>Off</u>, FDL or TS0, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR
Inband Mng Routing Protocol	Protocol used for routing information over the link Proprietary, RIP2, <u>None</u>

Dedicated TS	Indicates the dedicated time slot. The Fbit cannot be a dedicated TS If Inband Mng is Dedicated TS, Dedicated TS/PPP or Dedicated TS/FR the available options are 1 to 24 . Otherwise NA is displayed.
Line Length (feet)	Length of the cable connecting the T1 port and the network entry point. This parameter affects the transmit signal mask required to meet DSX-1 requirements, as specified by AT&T CB-119, or operation requirements of FCC Rules Part 68A. This parameter is only applicable for DT1-DSU cards 0-133, 134-266, 267-399, 400-533, 534-655, FCC-68.
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF, <u>ZE</u>
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None - Non-transparent mode. When one of the links is in out-of-service state, the time slots carry the appropriate out-of-service code (data/voice OOS) to the other end of the link. Trans - When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state. Full - Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change.
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state Forced Idle - Signaling bits A and B are idle when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also idle. Forced Busy - Signaling bits A and B are busy when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also busy. Busy Idle - Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are idle for 2.5 seconds before switching to busy state. Idle Busy - Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are busy for 2.5 seconds before switching to idle state.
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)

RDN Data Tab

➤ To view the Redundancy Data:

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 2-5](#). A message is displayed if no redundancy has been defined for this card.

DHS Software Configuration

➤ **To display the software configuration of a DHS port:**

- Select the desired port and from the **Configuration** menu, select, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-27](#)).



Figure 2-27. DHS Software Configuration Dialog Box

Table 2-20. DHS Software Configuration Parameters

Parameter	Possible Values / Remarks
Rate (Kbps)	Data rate of the selected port, in the format “$nx56$(or 64)=data rate,” where n equals the number of active time slots (1..24 or 1..31) that are needed to carry the data stream connected to the selected port. 56 or 64 is the basic rate multiplier. If the selected slot is also the DXC's Master Clock Source Slot or Fallback Clock Source Slot, do not set the Rate to 0 (see page 2-4). This will cause a Sanity Check Error 0x56=0 or 0x64=0 - Port is not connected. nx56 where $n=1..31$ (56..1736) nx64 where $n=1..31$ (64..1984)
Clock Mode	Clock signal mode of the selected port DCE - DXC operates as a DCE and provides transmit and receive clock signals to the DTE equipment connected to the selected port. DTE1 - DXC provides receive clock signals to the equipment connected to the selected port, and receives transmit clock signals from the connected equipment. DTE2 - DXC receives both transmit and receive clock signals from the equipment connected to the selected port. The DXC buffers and retimes the incoming data. Note: If the selected slot is also the DXC's Master Clock Source Slot or Fallback Clock Source Slot (see page 2-4), set the Clock Mode to DTE2.
FIFO Size	Size of the FIFO data buffer on the selected port. This parameter is only applicable when Clock Mode = DTE2 Auto - Automatic FIFO size selection 16 - FIFO size = ± 16 bits 30 - FIFO size = ± 30 bits 52 - FIFO size = ± 52 bits 72 - FIFO size = ± 72 bits
CTS	State of the (Clear to Send) line in the selected port On - is always on. =RTS - line follows the local RTS line.

HDSL Software Configuration

HDSL cards occupy two slots. HDSL/S cards occupy only one slot (in DXC 30E).

Note For DXC-10A, Slot 3 (IO-1) can be only be programmed with a single card. Slots 4 to 7 (IO-2..IO-5) can be programmed with single cards or double ones. However, when a double HDSL card is chosen, both slots in the following pairs (IO-2 & IO-3, IO-4 & IO-5) must be empty.

For DXC-8R, slots 3 to 6 (IO-1 to IO-4) are programmable with single cards or double ones. However, when a double HDSL card is chosen, both slots in the following pairs (IO-1 & IO-2, IO-3 & IO-4) must be empty.

For DXC 30, when a double HDSL card is chosen for insertion in a certain slot, the next sequential slot must also be empty.

E1 Cards

► To display the software configuration of an HDSL port:

- Select the internal port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears (Figure 2-28).

Figure 2-28. HDSL E1 Software Configuration Dialog Box

Table 2-21. HDSL E1 DT1 SW Cfg> Tab Parameters

Parameter	Possible Values / Remarks
Line Type	Type of E1 line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry E1 - CCITT Rec. G.704 - Table 4a E1-MF - CCITT Rec. G.704 - Table 4a, with TS16 multiframing enabled Unframed - for use when the data being transmitted is unframed
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF
Link Mode	Indicates the Link Mode Regular, Transparent If Link Mode=Transparent, Inbang Mng must be Off

<SW Cfg Tab

Table 2-22. HDSL E1 DT1 <SW Cfg Tab Parameters

Parameter	Possible Values / Remarks
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None - Non-transparent mode. When one of the links is in out-of-service state, the time slots carry the appropriate out-of-service code (data/voice OOS) to the other end of the link. Trans -- When one of the links is in out--of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state. Full - Fully transparent mode. When one of the links is in out--of--service state, the state of the time slots and the state of the signaling bits does not change.
OOS Signal	State of the signaling bits when the link is in out--of--service (OOS) state When Line Type=E1, this option is NA . Forced Idle -- Signaling bits A and B are idle when the link is in out--of--service state. In addition, if the line type is ESF, signaling bits C and D are also idle. Forced Busy -- Signaling bits A and B are busy when the link is in out--of--service state. In addition, if the line type is ESF, signaling bits C and D are also busy. Busy Idle -- Signaling bits A and B are busy for 2.5 seconds, then become idle until the out--of--service state ends. In addition, if the line type is ESF, signaling bits C and D are idle for 2.5 seconds before switching to busy state. Idle Busy -- Signaling bits A and B are idle for 2.5 seconds, then become busy until the out--of--service state ends. In addition, if the line type is ESF, signaling bits C and D are busy for 2.5 seconds before switching to idle state.
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)

Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Inband Mng	Identifier of inband management over the link Off, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR If this port is the Destination Port for a DIM card or is designated as the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR. If this port is selected as monitoring port do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR. If Link Mode=Transparent, Inband Mng must be Off
Inband Mng Routing Protocol	Protocol used for routing information over the link. Proprietary and RIP2 are available only when Inband Mng is not Off None, Proprietary, RIP2
Dedicated TS	Indicates the dedicated time slot 1..15, 17..31 when Inband Mng is Dedicated TS, Dedicated TS/PPP or Dedicated TS/FR otherwise NA If E1 Line Type=E1-MF, TS 16 is not available

RDN Data Tab

➤ To view the Redundancy Data:

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 2-5](#). A message is displayed if no redundancy has been defined for this card.

T1 Cards

➤ To display the software configuration of an HDSL port:

- Select the internal port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-29](#)).

[E.1] 172.17.152.240: Port Information

Slot:

Port:

Card Type:

SW Cfg <SW Cfg Rdn Data

Line Type:

Line Code:

Signal Mode:

Sync:

Idle Code (hex):

Link Mode:

Figure 2-29. HDSL T1 Software Configuration Dialog Box

Table 2-23. HDSL T1 SW Cfg> Tab Parameters

Parameter	Possible Values / Remarks
Line Type	Type of T1 line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry For T1 ports this parameter is read-only ESF (Extended Superframe DS1) -- 24 frames per multiframe Unframed - for use when the data being transmitted is unframed
Line Code	Line coding method used for zero suppression. This parameter is read-only B8ZS -- B8ZS coding. A specified pattern of normal bits and bipolar variations replaces a sequence of 8 zero bits. This option provides clear channel capability.
Signal Mode	Type of signaling transfer mode used by the selected card None, Robbed Bit
Sync	Reduces the time required for the T1 port to return to normal operation after local loss of synchronization TR--62411 -- Complies with AT&T TR--62411 (after 10 second) Fast -- After second
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF, 7E

Link Mode	Indicates the Link Mode If Link Mode=Transparent, Inband Mng must be Off Regular, Transparent
-----------	--

<SW Cfg Tab

Table 2-24. HDSL T1 <SW Cfg Tab Parameters

Parameter	Possible Values / Remarks
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None - Non-transparent mode. When one of the links is in out-of-service state, the time slots carry the appropriate out-of-service code (data/voice OOS) to the other end of the link. Trans -- When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state. Full -- Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change.
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state Forced Idle -- Signaling bits A and B are idle when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also idle Forced Busy -- Signaling bits A and B are busy when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also busy Busy Idle -- Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are idle for 2.5 seconds before switching to busy state Idle Busy -- Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are busy for 2.5 seconds before switching to idle state
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Inband Mng	Identifier of inband management over the link Off, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR If this port is the Destination Port for a DIM card or is designated as the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR for Inband Mng If Link Mode=Transparent, Inband Mng must be Off
Inband Mng Routing Protocol	Protocol used for routing information over the link None, Proprietary, RIP2 Proprietary and RIP2 are available only when Inband Mng is not Off

Dedicated TS	Indicates the dedicated TS NA, 1..24 TS 25 (Fbit) cannot be a Dedicated TS. Dedicated TS depends on Frame Type of External port
--------------	---

RDN Data Tab

► To view the Redundancy Data:

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 2-5](#). A message is displayed if no redundancy has been defined for this card.

DIM Software Configuration

► To display the software configuration of a DIM port:

- Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-30](#)).

[E.1] 172.17.152.240: Port Information

Slot: 10-9
Port: external-1
Card Type: DIM-10BaseT

SW Cfg

Tx Mode: Regular
Polarity: Normal Clk
Clock Mode: DCE
Max. Delay (msec): 64
Management: Disabled
Ethernet Mode: Half
Bridging: No

Set Cancel

Figure 2-30. DIM Software Configuration Dialog Box

Table 2-25. DIM SW Cfg>Tab Parameters

Parameter	Possible Values / Remarks
Tx Mode	<u>Regular</u> , Broadcast
Polarity	<u>Normal Clk</u> , Inverted
Clock Mode	Clock signal mode of the selected port Ext-DCE, DCE, Smooth, Ext-Smooth For DIM-E1 cards Clock Mode=EXT-DCE. Choosing another option will cause an error message to be displayed when Set is pressed
Max Delay (msec)	16, 64
Management	<u>Disabled</u> , Enabled
The following fields exist only for DIM-10BaseT cards.	
Ethernet Mode	Full, <u>Half</u>
Bridging	Yes, <u>No</u>

DE3, DE3/F, DT3, DT3/F, DT3/G747 Software Configuration

Note The DT3/G747 has one external T3 port and 21 internal E1 ports.

➤ **To configure the software configuration for a DE3, DE3/F, DT3, DT3/F, DT3/G747 internal port:**

- Select an internal port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-31](#)).

[E.1] 172.17.152.240: Port Information

Slot:

Port:

Card Type:

SW Cfg | Rdn Data

Line Type:

Line Code:

Sync:

Idle Code (hex):

Link Mode:

CGA:

Inband Mng:

Inband Mng Routing Protocol:

Dedicated TS:

Figure 2-31. DE3, DE3/F Software Configuration Dialog Box

Figure 2-32. DT3, DT3/F Software Configuration Dialog Box

Table 2-26. Internal Ports-DE3, DE3/F, DT3, DT3/F SW Cfg>Tab Parameters

Parameter	Possible Values / Remarks
Line Type	Type of line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry T3 Lines: ESF (Extended Superframe DS1) -- 24 frames per multiframe. (Only for T3 lines) D4 -- (AT&T D4 format DS1) -- 12 frames per multiframe. (Only for T3 lines). Unframed - for use when the data being transmitted is unframed E3 Lines: E1 - CCITT Rec. G.704 - Table 4a E1-CRC - CCITT Rec. G.704 - Table 4b E1-MF - CCITT Rec. G.704 - Table 4a, with TS16 multiframing enabled E1-CRC-MF - CCITT Rec. G.704 - Table 4b, with TS16 multiframing enabled Unframed - for use when the data being transmitted is unframed
Line Code	Line coding method used for zero suppression. Only for T3 lines. B7 - B7ZS coding, Jammed Bit zero suppression. A pulse is forced in bit 8 of each 8--bit period of each channel. Therefore, only 7 bits per channel (1.344 Mbps) is available for data. B8ZS -- B8ZS coding. A specified pattern of normal bits and bipolar variations replaces a sequence of 8 zero bits. This option provides clear channel capability. Trans - Transparent (AMI) coding. No zero suppression is present.

Sync	Reduces the time required for the port to return to normal operation after local loss of synchronization TR-62411 - Complies with AT&T TR--62411 (after 10 second). Fast - After second CCITT - Complies with CCITT Rec. G.732. (only for E3 internal ports)
------	--

Table 26. Internal Ports-DE3, DE3/F, DT3, DT3/F SW Cfg>Tab Parameters

Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link Trans - When one of the links is in out--of--service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state. Full - Fully transparent mode. When one of the links is in out--of--service state, the state of the time slots and the state of the signaling bits does not change.
Inband Mng	Identifier of inband management over the link For Internal ports: Off, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR If Link Type=Transparent, Inband Mng must be Off Proprietary and RIP2 are available only when Inand Mng is not Off
Dedicated TS	Indicates the dedicated TS NA, 1..24, 1..31
Inband Mng Routing Protocol	Protocol used for routing information over the link None, Proprietary, RIP2
Link Mode	Indicates the Link Mode Regular, Transparent

- **To configure the software configuration for a DT3, DT3/F external port:**
- Select an external port and from the **Configuration** menu, select **Port Info** followed by **Software Configuration...**

The Software Configuration dialog box appears.

Table 2-27. External Ports- DT3, DT3/F Software Configuration Parameters

Parameter	Possible Values / Remarks
Line Length (feet)	0-450, 451-900
Frame Type	M-13, C-bit-Tx, C-bit-Tx-Mng, C-bit-Rx, C-bit-Rx-Mng
Tx Clock Source	External, Internal

RDN Data Tab

➤ **To view the Redundancy Data:**

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 2-5](#). A message is displayed if no redundancy has been defined for this card.

D4T1, D8T1 Software Configuration

➤ **To display the software configuration for a D4T1, D8T1 external port:**

- Select and external port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-33](#)).

[E.1] 172.17.152.240: Port Information

Slot: 10-15

Port: external-1

Card Type: D4T1

SW Cfg <SW Cfg

Line Mode: DSU

Line Type: ESF

Line Code: B8ZS

Signal Mode: Robbed Bit

Rx Gain: Short Haul

Sync: TR-62411

Link Mode: Regular

Set Cancel

Figure 2-33. External Port D4T1, D8T1 Software Configuration Dialog Box

Table 2-28. D4T1, D8T1 External Port SW Cfg>Tab Parameters

Parameter	Possible Values / Remarks
Line Mode	<u>DSU</u> , CSU
Line Type	Type of line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry <u>T1 Lines:</u> <u>ESF</u> (Extended Superframe DS1) -- 24 frames per multiframe. (Only for T1 lines) <u>D4</u> -- (AT&T D4 format DS1) -- 12 frames per multiframe. (Only for T1 lines) Unframed - for use when the data being transmitted is unframed <u>E1 Lines:</u> E1 - CCITT Rec. G.704 - Table 4a E1-CRC - CCITT Rec. G.704 - Table 4b E1-MF - CCITT Rec. G.704 - Table 4a, with TS16 multiframing enabled E1-CRC-MF - CCITT Rec. G.704 - Table 4b, with TS16 multiframing enabled Unframed - for use when the data being transmitted is unframed
Line Code	Line coding method used for zero suppression. Only for T1 lines B7 - B7ZS coding, Jammed Bit zero suppression. A pulse is forced in bit 8 of each 8--bit period of each channel. Therefore, only 7 bits per channel (1.344 Mbps) is available for data. <u>B8ZS</u> -- B8ZS coding. A specified pattern of normal bits and bipolar variations replaces a sequence of 8 zero bits. This option provides clear channel capability. Trans -- Transparent (AMI) coding. No zero suppression is present.
Signal Mode	Type of signaling transfer mode used by the selected card None , <u>Robbed Bit</u>
Rx Gain	Long Haul , <u>Short Haul</u>
Sync	Reduces the time required for the port to return to normal operation after local loss of synchronization TR-62411 - Complies with AT&T TR--62411 (after 10 second) Fast - After second
Link Mode	Indicates the Link Mode Regular , Transparent If Link Mode=Transparent, Inbang Mng must be Off

Table 2-29. D4T1, D8T1 External Port <SW Cfg Tab Parameters

Parameter	Possible Values / Remarks
Tx Gain Mask	<u>0</u> , 7.5 , 15.0 , 22.5 Only enabled when Line Mode=CSU
Line Length (feet)	<u>0-133</u> , 134-266 , 267-399 , 400-533 , -534-655 , FCC-68 Only enabled when Line Mode=DSU

Inband Mng	Identifier of inband management over the link Off, FDL or TSO, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR If this port is the Destination Port for a DIM card or is designated as the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR for Inband Mng. If Link Mode=Transparent, Inband Mng must be Off
Inband Mng Routing Protocol	Protocol used for routing information over the link. Proprietary and RIP2 are available only when Inband Mng is not Off None, Proprietary, RIP2
Dedicated TS	Indicates the dedicated TS NA, 1..24 TS 25 (Fbit) cannot be a Dedicated TS Dedicated TS depends on Frame Type of External port
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None - Non-transparent mode. When one of the links is in out-of-service state, the time slots carry the appropriate out-of-service code (data/voice OOS) to the other end of the link. Trans -- When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state. Full -- Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change.
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state Forced Idle -- Signaling bits A and B are idle when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also idle. Forced Busy -- Signaling bits A and B are busy when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also busy. Busy Idle -- Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are idle for 2.5 seconds before switching to busy state Idle Busy - Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are busy for 2.5 seconds before switching to idle state
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)

➤ **To display the software configuration for a D4T1, D8T1 external port:**

- Select an external port and from the **Configuration** menu, select **Port Info...**

The Port Information dialog box appears ([Figure 2-34](#)).

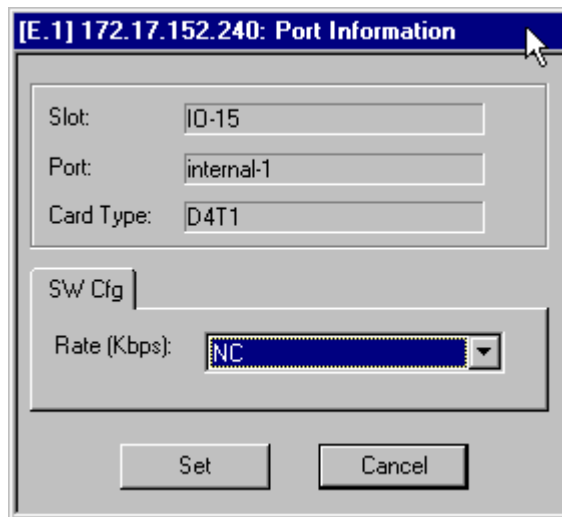


Figure 2-34. Internal Port D4T1, D8T1 Software Configuration Dialog Box

Table 2-30. D4T1, D8T1 Internal Port SW Cfg Tab Parameters

Parameter	Possible Values / Remarks
Rate	<u>NC</u> , 64 Kbps

D4E1, D8E1 Software Configuration

- To display the software configuration for a D4E1, D8E1 external port:
 - Select an external port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-35](#)).

The dialog box is titled "[E.1] 172.17.152.240: Port Information". It contains the following fields and options:

- Slot: IO-1
- Port: external-1
- Card Type: D4E1
- SW Cfg > <SW Cfg (tabbed interface)
- Line Type: E1
- Sync: CCITT
- Inband Mng: Off
- Inband Mng Routing Prot: None
- Dedicated TS: NA
- Idle Code (hex): 7E
- Link Mode: Regular
- CGA: None
- Buttons: Set, Cancel

Figure 2-35. External Port D4E1, D8E1 Software Configuration Dialog Box

Table 2-31. D4E1, D8E1 External Port SW Cfg> Tab Parameters

Parameter	Possible Values
Line Type	Type of line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry E1 - CCITT Rec. G.704 - Table 4a E1-CRC - CCITT Rec. G.704 - Table 4b E1-MF - CCITT Rec. G.704 - Table 4a, with TS16 multiframing enabled E1-CRC-MF - CCITT Rec. G.704 - Table 4b, with TS16 multiframing enabled Unframed - for use when the data being transmitted is unframed
Sync	Reduces the time required for the port to return to normal operation after local loss of synchronization TR-62411 -- Complies with AT&T TR--62411 (after 10 second) CCITT - Complies with CCITT Rec. G.732 Fast - After second
Inband Mng	Identifier of inband management over the link If this port is the Destination Port for a DIM card or is designated as the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR for Inband Mng If Link Mode=Transparent, Inband Mng must be Off Off, FDL or TSO, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR.
Inband Mng Routing Protocol	Protocol used for routing information over the link None, Proprietary, RIP2 Proprietary and RIP2 are available only when Inband Mng is not Off
Dedicated TS	Indicates the dedicated TS NA, 1..31 Dedicated TS depends on Frame Type of External port
Idle Code (hex)	00 - FF Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box
Link Mode	Indicates the Link Mode Regular, Transparent If Link Mode=Transparent, Inband Mng must be Off
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None Trans -- When one of the links is in out--of--service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state Full -- Fully transparent mode. When one of the links is in out--of--service state, the state of the time slots and the state of the signaling bits does not change

<SW Cfg Tab

Table 2-32. D4E1, D8E1 External Port <SW Cfg Tab Parameters

Parameter	Possible Values
-----------	-----------------

OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state. If Line Type=E1 or E1-CRC then the OOS Signal = NA Forced Idle - Signaling bits A and B are busy when the link is in out-of-service state Forced Busy - Signaling bits A and B are idle when the link is in out-of-service state Busy Idle - Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends Idle Busy - Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Rx Gain	Long Haul, Short Haul, Monitor 12dB, Monitor 30dB The following fields are enabled when Link Mode≠Transparent
SA Bit 4	1 (0001)
SA Bit 5	0 (0000)
SA Bit 6	Management (0010, available only when Inband Mng ≠FDL or TSO)
SA Bit 7	Transparent (0011)
SA Bit 8	When set is performed, same value will be enforced on the external port's pair: external-1 & external-2, external-3 & external-4, external-5 & external-6, external-7 & external-8)

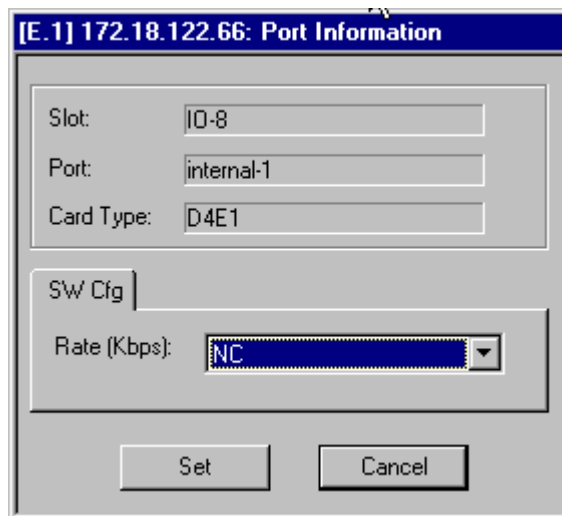


Figure 2-36. Internal Port D4E1, D8E1 Software Configuration Dialog Box

- To display the software configuration for a D4E1, D8E1 internal port:
 - Select an external port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears.

Table 2-33. D4E1, D8E1 Internal Port Configuration Parameters

Parameter	Possible Values / Remarks
Rate	<u>NC</u> , 64 Kbps When Inband Mng=Dedicated TS, Dedicated TS/PPP or Dedicated TS/FR, Rate cannot be NC

D8U, D16U Software Configuration

- To configure the software configuration for a D8U, D16U external port:
 - Select an external port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-37](#)).

The figure displays four sequential screenshots of the 'External Port D8U, D16U Software Configuration Dialog Box' for the configuration of port 172.17.152.240. Each screenshot shows the 'External' tab selected, with the following fields and values:

- Slot:** IO-1
- Port:** external-5
- Card Type:** D8U
- External Tab:** B1, B2, D
- Interface:** LT-1
- Activation Type:** NA
- LT-1 Section:**
 - ☒ LLb Enable: ☒ RLB Enable:
 - Clock Mode:** DCE
 - Rate (Kbps):** NC
- Buttons:** Set, Cancel

The four screenshots represent different stages of the configuration process, showing the progression from initial setup to final configuration.

Figure 2-37. External Port D8U, D16U Software Configuration Dialog Box

Table 2-34. D8U, D16U External Port SW Cfg Tab Parameters

Parameter	Possible Values / Remarks
-----------	---------------------------

Interface	Selects the operating mode of the corresponding port NT-I, LT-I, LT-1 To operate a port in a link with an ASM-31/ASMi-31, you must select LT-1 Note: If card is being used by the Path Management Application, the application will not let you change the value of this field if Path Management Application will be affected
Activation Type	Selects the activation mode of the port 1..3, NA
LT-1	
LLB Enable	Controls the activation of a local loopback (loopback type 3 per ITU-T Rec. V.54) through the LLB pin in the user's port interface of the ASMi-31 connected to the corresponding D8U/D16U port: Enabled (checked) Loopback activation enabled Disabled (unchecked) Loopback activation disabled
RLB Enable	Controls the activation of a remote loopback (loopback type 2 per ITU-T Rec. V.54) through the RLB pin in the user's port interface of the ASMi-31 connected to the corresponding D8U/D16U port: Enabled (checked) Loopback activation enabled Disabled (unchecked) Loopback activation disabled
Clock Mode	Selects the timing mode of the ASMi-31 connected to the corresponding port: DCE The ASMi-31 unit provides transmit and receive clock signals, derived from the line signal received from the corresponding port, to the user's equipment connected to its user's port EXT-DCE The ASMi-31 unit provides the receive clock signal (derived from the line signal received from the corresponding port) to the user's equipment connected to its user's port, and accepts the transmit clock from the user's equipment. The user's equipment must be configured to operate with loopback timing

Table 2-35. D8U, D16U External Port SW Cfg Tab Parameters (cont.)

Parameter	Possible Values
Rate	Controls the connection of the B1 channel of the corresponding port to a selected time slot of one of the DXC links: NC: The port is not connected 64 kbps: The port is connected, and is configured to carry a payload of 64 kbps (this requires the use of a single B channel, and the allocation of one time slot to this port) 128 kbps: The port is connected, and is configured to carry a payload of 128 kbps (this requires the use of both B channels, and the allocation of two time slots to this port)
Connect	Determines whether the corresponding port is connected to the main link: YES Port is connected NO Port is disconnected. You can still program the desired parameters, so the port will be ready to operate when needed
Concentrated To	None

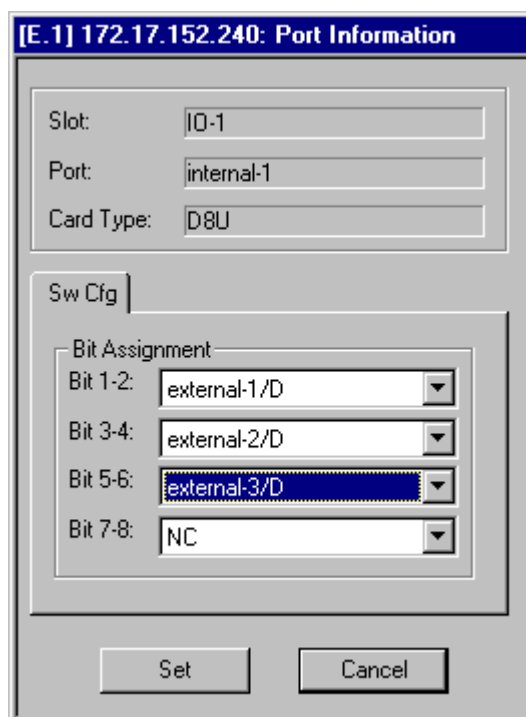


Figure 2-38. Internal Port D8U, D16U Software Configuration Dialog Box

Table 2-36. D8U, D16U Internal Port Configuration Parameters

Parameter	Possible Values / Remarks
Bit 1-2	B is the desired internal port number (1 or 2 for D8U, and 1, 2, 3 or 4 for D16U) NC , external-1/D .. external-n/D where n=8 (D8U card), n=16 (D16U card)
Bit 3-4	NC , external-1/D .. external-n/D where n=8 (D8U card), n=16 (D16U card)
Bit 5-6	NC , external-1/D .. external-n/D where n=8 (D8U card), n=16 (D16U card)
Bit 7-8	NC , external-1/D .. external-n/D where n=8 (D8U card), n=16 (D16U card)

DSTM-1(FRAC.), DSTM-1/R(FRAC.) Software Configuration

- To configure the software configuration for a DSTM-1(FRAC.), DSTM-1/R(FRAC.) external port:
 - Select an external port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-39](#)).

Figure 2-39. External Port DSTM-1(FRAC.) Software Configuration Dialog Box

Table 2-37. DSTM-1(FRAC.), DSTM-1/R(FRAC.) External Port Information Configuration Parameters

Parameter	Possible Values / Remarks
Enable AIS upon Fail	Checked (enabled), Unchecked (disabled)
Enable RDI upon Fail	Checked (enabled), Unchecked (disabled)
SD Threshold (10E-)	Signal Degraded Threshold Units: [10E-] Threshold is 10E-x relative to the frequency of the data flow 5, 6, 7, 8, 9
EED Threshold (10E-)	Excessive Error Defect Threshold Units: [10E-] Threshold is 10E-x relative to the frequency of the data flow 3, 4, 5
Clock Mode	Clock Source of the STM-1 port LBT , Internal

Internal E1 Port

- To configure the software configuration for a DSTM-1(FRAC.), DSTM-1/R(FRAC.) internal E1 port:
 - Select the internal E1 Port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-40](#)).

[E.1] 172.17.152.240: Port Information

Slot: 10-2
 Port: internal-1
 Card Type: DSTM1(FRAC.)

SW Cfg <SW Cfg Rdn Data

Line Type: E1
 Sync: CCITT
 Inband Mng: Off
 Inband Mng Routing Prot: None
 Dedicated TS: NA
 Idle Code (hex): 7E
 Link Mode: Regular
 CGA: None

Set Cancel Apply

Figure 2-40. DSTM-1(FRAC.), DSTM-1/R(FRAC.) Internal E1 Software Configuration

Table 2-38. DSTM-1(FRAC.), DSTM-1/R(FRAC.) Internal Port E1 SW Cfg> Tab Parameters

Parameter	Possible Values
Line Type	Type of line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry E1 - CCITT Rec. G.704 - Table 4a E1-CRC - CCITT Rec. G.704 - Table 4b E1-MF - CCITT Rec. G.704 - Table 4a, with TS16 multiframing enabled E1-CRC-MF - CCITT Rec. G.704 - Table 4b, with TS16 multiframing enabled Unframed - for use when the data being transmitted is unframed
Sync	Reduces the time required for the port to return to normal operation after local loss of synchronization TR-62411 -- Complies with AT&T TR--62411 (after 10 second) CCITT - Complies with CCITT Rec. G.732 Fast - After second
Inband Mng	Identifier of inband management over the link If this port is the Destination Port for a DIM card or is designated as the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR for Inband Mng If Link Type=Unframed, Inband Mng must be Off Off , Dedicated TS , Dedicated TS/PPP , Dedicated TS/FR .

Inband Mng Routing Protocol	Protocol used for routing information over the link None, Proprietary, RIP2 Proprietary and RIP2 are available only when Inand Mng is not Off
Dedicated TS	Indicates the dedicated TS NA, 1..31 Dedicated TS depends on Line Type of port
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF
Link Mode	Indicates the Link Mode Regular, Transparent If Link Type=Unframed, Link Mode=Transparent
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None Trans -- When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state Full -- Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change

<SW Cfg Tab

Table 2-39. *DSTM-1(FRAC.), DSTM-1/R(FRAC.) Internal Port E1 <SW Cfg Tab Parameters*

Parameter	Possible Values
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state. If Line Type=E1 or E1-CRC then the OOS Signal = NA Forced Idle - Signaling bits A and B are busy when the link is in out-of-service state Forced Busy - Signaling bits A and B are idle when the link is in out-of-service state Busy Idle - Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends Idle Busy - Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00..FF (hexadecimal)
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00..FF (hexadecimal)

RDN Data Tab

► To view the Redundancy Data:

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 2-5](#). A message is displayed if no redundancy has been defined for this card.

Internal 133 Port

► To configure the software configuration for a DSTM-1(FRAC.), DSTM-1/R(FRAC.) internal 133 port:

- Select the 133 Port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-41](#)).

[E.1] 172.18.122.66: Port Information

Slot:	10-11
Card Type:	DSTM1(FRAC.)
Port:	internal-133
Upon EED:	☒
Upon SLM:	☒
Upon Path Trace:	☒
SD Threshold:	3
EED Threshold:	6
J1 Tx Path Trace Enable:	☐
J1 Rx Path Trace Enable:	☐
J1 Path Trace:	
Set Cancel	

Figure 2-41. Internal-133 Port (VC4) Software Configuration Dialog Box

Table 2-40. DSTM-1(FRAC.), DSTM-1/R(FRAC.) Internal Port-133 (VC4) Parameters

Parameter	Possible Values / Remarks
Enable AIS and RDI	
Upon EED	Enables/Disables AIS and RDI signal when Excessive Error Defect is detected Checked (enabled), Unchecked (disabled)
Upon SLM	Enables/Disables AIS and RDI signal when Signal Label Mismatch is detected Checked (enabled), Unchecked (disabled)
Upon Path Trace	Checked (enabled), Unchecked (disabled)
SD Threshold (10E-)	Signal Degraded Threshold Units: [10E-] Threshold is 10E-x relative to the frequency of the data flow 5, 6, 7, 8, 9
EED Threshold (10E-)	Excessive Error Defect Threshold Units: [10E-] Threshold is 10E-x relative to the frequency of the data flow 3, 4, 5
J1 Rx Path Trace Enable	Enables/Disables checking J1 Rx Path Trace Checked (enabled), Unchecked (disabled)
J1 Tx Path Trace Enable	Enables/Disables checking J1 Tx Path Trace Checked (enabled), Unchecked (disabled)
J1 Path Trace	Maximum 16 Characters Enabled only if J1 Tx/Rx Path Trace=Enable

Internal VC-12 Port

- **To configure the software configuration for a DSTM-1(FRAC.), DSTM-1/R(FRAC.) internal VC-12 port:**
 - Select the VC-12 port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 2-42](#)).

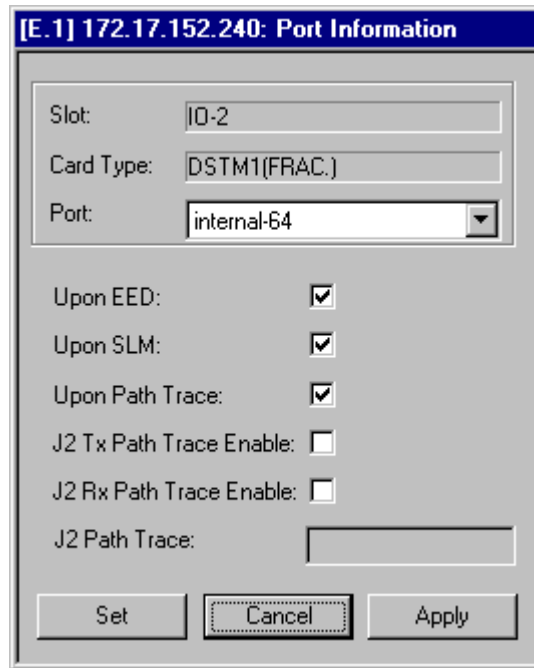


Figure 2-42. DSTM-1(FRAC.), DSTM-1/R(FRAC.) VC-12 Ports Software Configuration

- **To configure the software configuration for all DSTM-1(FRAC.), DSTM-1/R(FRAC.) internal VC-12 ports:**
 - Select the VC-12 port and from the **Configuration** menu, select **All Ports Configuration...**

The All Ports Configuration dialog box appears (Figure 2-43).

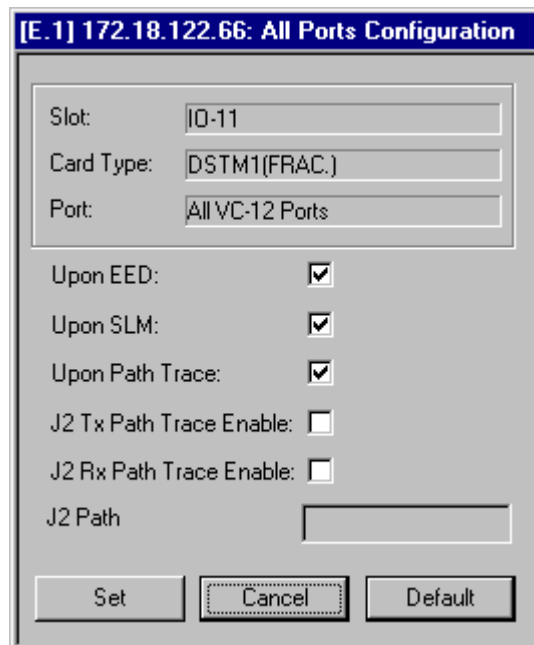


Figure 2-43. DSTM-1(FRAC.), DSTM-1/R(FRAC.) Internal E1 All Ports Configuration

Table 2-41. DSTM-1(FRAC.), DSTM-1/R(FRAC.) Internal Port VC-12 Parameters

Parameter	Possible Values / Remarks
Enable AIS and RDI	
Upon EED	Enables/Disables AIS and RDI signal when Excessive Error Defect is detected Checked (enabled), Unchecked (disabled)
Upon SLM	Enables/Disables AIS and RDI signal when Signal Label Mismatch is detected Checked (enabled), Unchecked (disabled)
Upon Path Trace	Checked (enabled), Unchecked (disabled)
SD Threshold (10E-)	Signal Degraded Threshold Units: [10E-] Threshold is 10E-x relative to the frequency of the data flow 5, 6, 7, 8, 9
EED Threshold (10E-)	Excessive Error Defect Threshold Units: [10E-] Threshold is 10E-x relative to the frequency of the data flow 3, 4, 5
J2 Rx Path Trace Enable	Enables/Disables checking J2 Rx Path Trace Checked (enabled), Unchecked (disabled)
J2 Tx Path Trace Enable	Enables/Disables checking J2 Tx Path Trace Checked (enabled), Unchecked (disabled)
J2 Path Trace	Maximum 16 Characters Enabled only if J2 Tx/Rx Path Trace=Enable

Test Parameters

Test parameters can be configured for DT1/DE1, DIM, D4E1/D4T1, D8E1/D8T1 and the internal ports of the HDSL cards.

- From the Card View's **Configuration** menu, select **Test Param...**

The Test Parameters dialog box appears (Figure 2-44).

Figure 2-44. Test Parameters Dialog Box

Table 2-42. Test Parameters

Parameter	Possible Values / Remarks
BERT Pattern	2E3-1, 2E4-1, 2E5-1, 2E6-1, 2E7-1, 511, 2E10-1, 2047, 2E17-1, 2E18-1, QRSS, 2E21-1, 2E22-1, 2E25-1, 2E28-1, 2E29-1, 2E31-1 and 2E32-1
BERT Error Inject Rate (10E-)	The rate of BERT injection No Error, 1, 2, 3, 4, 5, 6, 7
TS Selection Mode Group	
User Defined [TS...]	User defined TSs must be defined in the User Defined TS dialog box. When User Defined [TS...] is checked, click <TS...>
DHS Port	DHS Port connected to the specified DT1/DE1 port must be specified when DHS Port is checked. This option is selectable only if a defined DHS card exists in the Edit Configuration
DHS Port Group	Provides a list of IO slots in which a DHS card is configured. This group is only available if DHS Port is checked
Slot	Only Slots containing DHS cards will be selectable
Port	internal-1 and internal-2.

► **To select the User Defined TSs:**

1. Check the **User Defined [TS...]** radio button in the Test Parameters dialog box.
2. Click **<TS... >**

The User Defined TS dialog box appears.

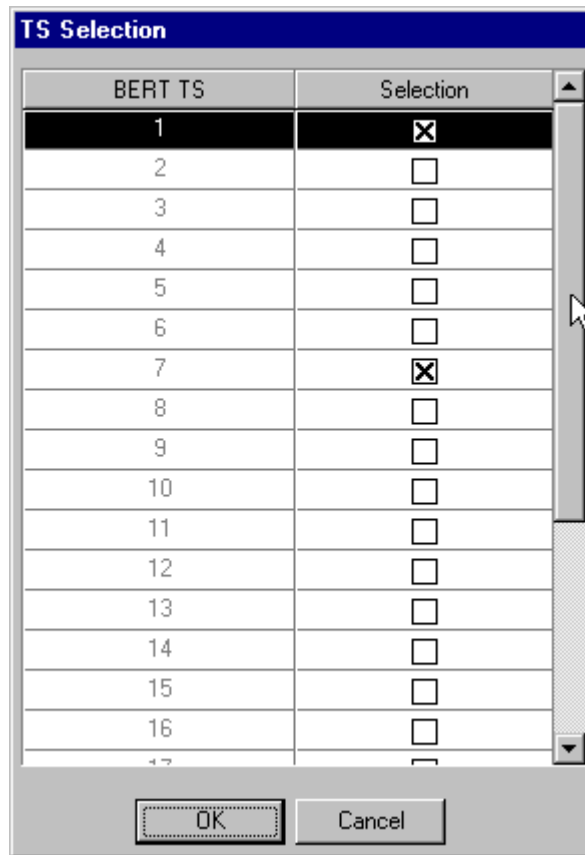


Figure 2-45. User Defined TS Dialog Box

3. Select the desired time slots on which tests will be run by clicking on the checkboxes. A selected checkbox is colored green.
4. Click **<OK>** to save the selection and return to the Test Parameters dialog box.
5. Click **<Set>** to save changes made in the Test Parameters dialog box.

Destination Ports Parameters

The Destination port parameters can be configured for DIM cards only.

► **To configure the destination ports of a DIM card:**

1. Select the desired port and from the **Configuration** menu, select **Destination Ports...**

The Destination Port Information dialog box appears ([Figure 2-46](#)).

2. Select an entry in the table and click **<Edit...>**

Index	Dest Slot	Dest Port
1	None	None
2	None	None
3	None	None
4	None	None
5	None	None
6	None	None
7	None	None
8	None	None

Figure 2-46. DIM Port Destination Ports Dialog Box

Table 2-43. DIM Destination Ports Parameters

Parameter	Possible Values / Remarks
Index	1..8
Dest Slot	Only slots containing T1/E1 cards are available for selection IO-1..IO-15.
Dest Port	external-1..external-2, internal-1..internal-28 Do not designate the same slot and port for more than one index. Slots selected for Dest. Slots must be of the same type as selected card. Mixed card types are not permitted. All defined destination ports must be from T1/E1 cards to T3/E3 cards. Don't select some from one type and some from another. Do not define a destination (slot or port) if it is already defined as a connected TS. Define index entries in ascending order. For DIM-E1 cards, only 1 E1 or 2 T1 connections can be assigned. Ports that have been defined as Secondary ports (part of a redundancy couple) cannot be defined as Destination ports. Ports that are Destination Ports for a DIM card must have Link Mode=Regular. Ports that are Destination Ports for a DIM card cannot be designated as a Monitoring Port

User Info Parameters

User Info parameters exist for all cards except DCL cards.

➤ **To configure/view User Info parameters:**

- In the Card View, select the desired port and from the **Configuration** menu, select **User Info...**

The User Info Parameters dialog box appears ([Figure 2-47](#)).

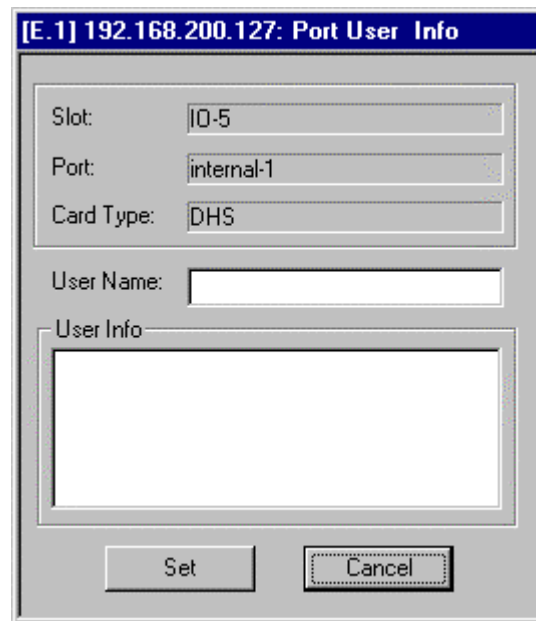


Figure 2-47. User Info Parameters Dialog Box

Table 2-44. User Info Parameters

Parameter	Possible Values / Remarks
User Name	User defined name This field can have a maximum of fifteen characters
User Info	User defined information This field can have a maximum of seventy characters

Monitoring Port Parameters

Monitoring Port parameters can be configured for DHS, DT1/DE1 and the internal ports of the HDSL cards.

➤ **To configure/view monitoring port parameters:**

- In the Card View, select the desired port and from the **Configuration** menu, select **Monitoring Port...**

The Monitoring Port Parameters dialog box appears ([Figure 2-48](#)).

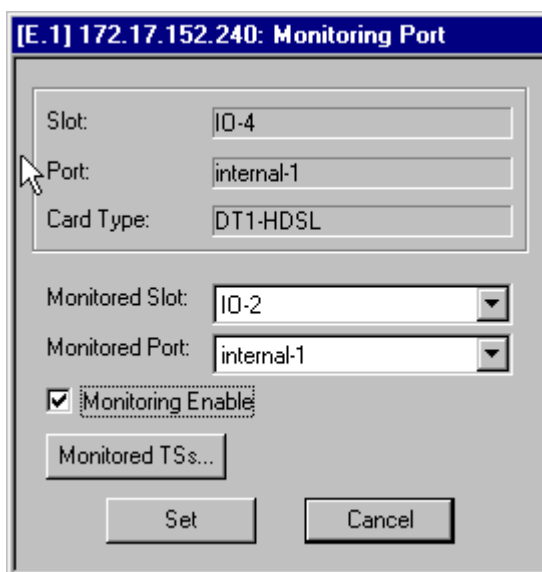


Figure 2-48. Monitoring Port Parameters Dialog Box

Table 2-45. Monitoring Port Parameters

Parameter	Possible Values / Remarks
	The following parameters are available only when Monitoring Enable is checked.
Monitored Slot	IO-1..IO-15 Only Slots containing T1, E1, DHS or HDSL cards will be selectable
Monitored Port	external-1..external-8, internal-1..internal-2

► **To view the monitored Time Slots:**

Note **Monitored TSs...** - will be enabled only when Monitoring Enable is checked.

- Click <**Monitored TS...**>
The Monitored TS Table appears (Figure 2-49).
- Select the checkboxes of the TSs you want to monitor.
They will be colored green.

Note

A T1/E1 port that is a Destination of a DIM card, cannot be a Monitoring Port or a Monitored Port.

A Monitoring Port cannot be part of an IO Redundant Pair of cards.

If the Monitoring Port and the Monitored Port is a DHS port, Monitoring can only be performed if their rates are the same.

A T1/E1 port that has Link Mode=Transparent cannot be a Monitoring Port.

Do not select a Monitored TS>24 when the Monitoring Port or Monitored Port is a T1 port.

TS	Selection
1	☐
2	☐
3	☐
4	☐
5	☒
6	☐
7	☐
8	☐
9	☐
10	☐
11	☒
12	☐
13	☐

Figure 2-49. Monitored TS Table

TU Mapping

TU Mapping can be configured for STM internal-133 (VC4) and internal-134 (VC4) ports of the DSTM-1(FRAC.), DSTM-1/R(FRAC.) cards.

➤ **To configure/view TU Mapping parameters:**

- In the Card View, select the desired port and from the **Configuration** menu, select **TU Mapping...**

The Port TU Mapping Parameters dialog box appears ([Figure 2-50](#)).

[E.1] 172.17.152.240: Port TU Mapping

Slot:

Card Type:

Port:

TU12	TU Type	Conn.Port	TU Mode
1	NC	NA	NA
2	NC	NA	NA
3	NC	NA	NA
4	NC	NA	NA
5	NC	NA	NA
6	NC	NA	NA
7	NC	NA	NA
8	NC	NA	NA
9	NC	NA	NA
10	NC	NA	NA
11	NC	NA	NA
12	NC	NA	NA
13	NC	NA	NA

Set Group... Reset All Cancel

Figure 2-50. TU Mapping Dialog Box

Table 2-46. TU Mapping Parameters

Parameter	Possible Values / Remarks
TU12	Unique TU (Tributary Unit) within VC-4 1..63
TU Type	Type of TU (Tributary Unit) connected to one of the E1 ports NC, Connected
Conn. Port	Connected port NA, internal-1 (E1).. internal-30 (E1)
TU Mode	TU Mode of connection NA, Add and Drop
[Edit...]	Opens Edit TU Mapping dialog box. Configure desired parameters and click <OK> .
[Group...]	Opens TU Connecting Group dialog box. Configure desired parameters and click <OK> .
[Reset]	Disconnects selected TU connection
[Reset All]	Disconnects all TU connections

Chapter 3

Agent Configuration Operations

3.1 Introduction

The Agent Mode (bottom of display) displays the current operating parameters. This data includes system information (hardware and software configurations), operating status, card and port configuration values. The data displayed in the Agent Mode may be used for comparison and analysis when adjusting parameters in the Edit Configuration Mode (top of display).

Diagnostics testing can also be performed at the management station in the Agent Mode. In addition, active alarm status and test status of all installed-programmed cards can be monitored through status lines appearing on the screen.

Any of the slot positions can be selected. Only correctly installed slot positions can be monitored and zoomed. The agent displays the rear panel of each of its installed cards, along with the card's name. If a slot is empty, no rear panel is displayed. If an unknown card is installed, the rear panel will display "UNK" (unknown).

If a slot in the agent is selected, a light blue frame surrounds it. If a slot is incorrectly installed or the installed card does not match the card in the database, a red border surrounds it when it is selected.

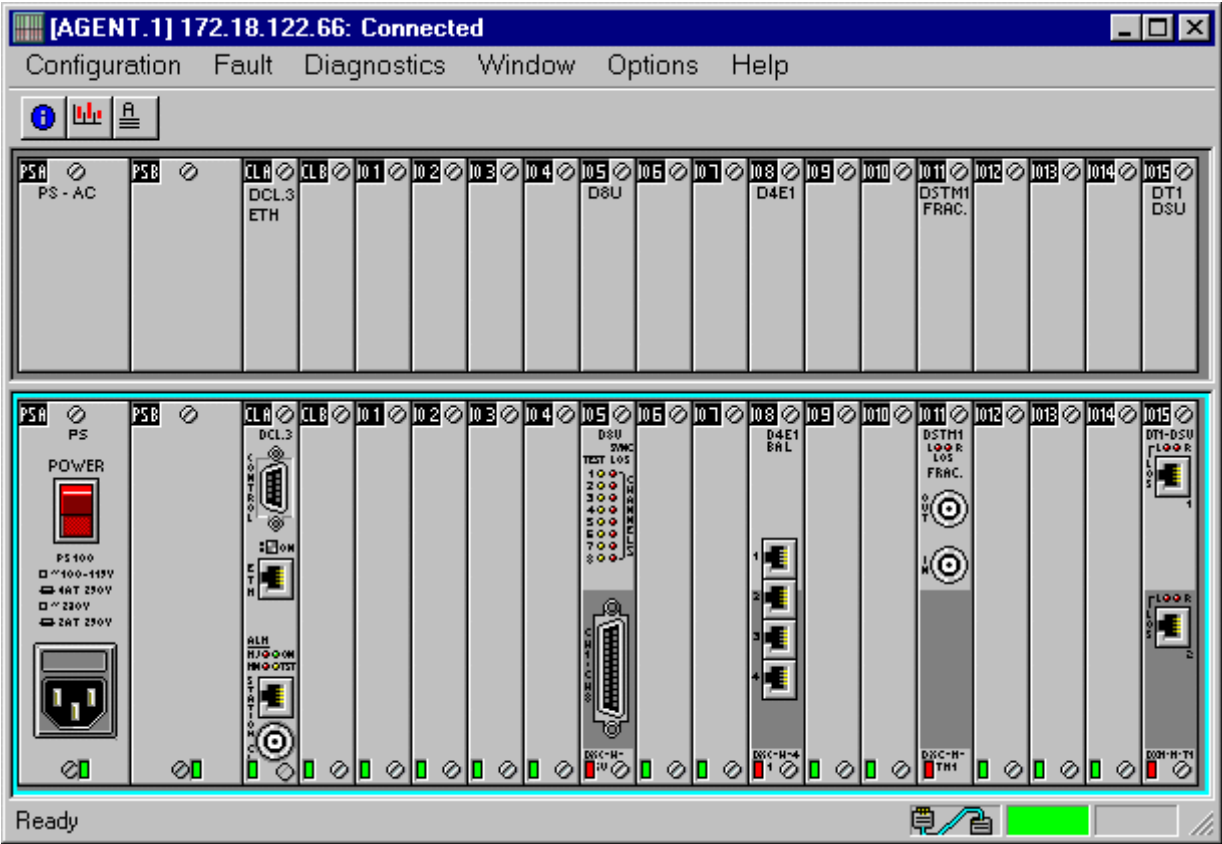


Figure 3-1. DXC Agent Mode on Bottom, Edit Configuration Mode on Top

3.2 DXC Configuration Operations - Agent View

Table 3-1 lists the different management options for the system level.

Table 3-1. System Management Options

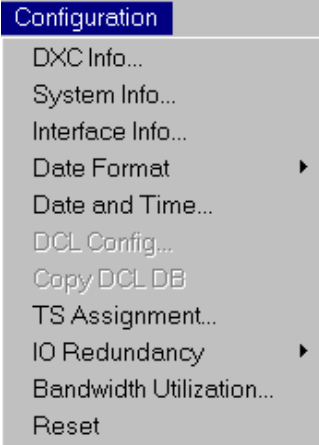
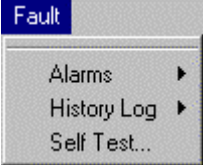
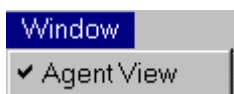
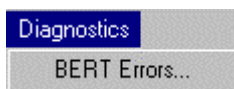
	Tasks - Configuration	Dialog Box and Parameter Location	Path
	Displaying DXC timing information	DXC Information dialog box (Figure 3-2)	Configuration ➔DXC Info...
	Displaying system information	System Information dialog box (Figure 3-3)	Configuration ➔System Info...
	Setting date format	See Setting the Date Format	Configuration ➔Date Format
	Setting Date & Time	Date and Time Setup dialog box (Figure 3-5)	Configuration ➔Date & Time...
	Displaying DCL configuration	DCL Configuration dialog box (Figure 3-6)	Configuration ➔DCL Config...
	Copying DXC configuration from offline DCL to online DCL	See Copying a DXC Agent DCL Configuration	Configuration ➔Copy DCL DB...
	Displaying Time Slots Assignments	See Time Slot Assignment	Configuration ➔TS Assignment...
	Displaying redundancy parameters	Redundancy Table (Figure 3-7)	Configuration ➔IO Redundancy Table...
	Displaying bandwidth utilization of internal BUS link	Bandwidth Utilization Window (Figure 3-9)	Configuration ➔Bandwidth Utilization...
	Resetting the DXC	See Resetting the Device	Configuration ➔Reset
	Tasks - Fault	Dialog Box and Parameter Location	Path
	Displaying All DXC alarms	DXC All Active Alarm List (Figure 3-10)	Fault ➔Alarms ➔List ➔All...
	Displaying System Level alarms	DXC Active Alarm List (Figure 3-11)	Fault ➔Alarms ➔List ➔System Level...

Table 1. System Management Options (Cont.)

Tasks - Fault	Dialog Box and Parameter Location	Path
Setting alarm severity level	Alarms Severity dialog box (Figure 3-12)	Fault ➤ Alarms ➤ Configuration ➤ Severity...
Defining alarm attributes	Alarm Attributes dialog box (Figure 3-13)	Fault ➤ Alarms ➤ Configuration ➤ Attributes...
Defining scope of alarm reports	Alarm Report dialog box (Figure 3-14)	Fault ➤ Alarms ➤ Configuration ➤ Reports...
Displaying the history log	Alarm Buffer dialog box (Figure 3-15)	Fault ➤ History Log ➤ List...
Displaying self test results	Self test Results dialog box (Figure 3-16)	Fault ➤ Self Test...
Tasks - Diagnostics	Dialog Box and Parameter Location	Path
Displaying BERT errors	BERT Errors (Figure 3-17)	Diagnostics ➤ BERT Errors...
Tasks - Window	Dialog Box and Parameter Location	Path
Closing Agent view	See <i>Closing Agent View</i>	Window ➤ Agent View ➤ Off
Tasks - Options	Dialog Box and Parameter Location	Path
Defining the manager list	Manager List dialog box (Figure 3-18)	Options ➤ Manager List...



Viewing DXC Agent Configuration

► To view the current DXC configuration:

- From the **Configuration** menu, select **DXC Info**.

The DXC Information dialog box appears (Figure 3-2).

[A.1] 192.168.200.27: DXC Information

Software Configuration

IP Address: 192.168.200.27

Type: DXC-30

Clock Source: Master

Master Clock Source

Type: Internal

Slot: NA

Port: NA

Frequency (KHz): NA

Fallback Clock Source

Type: None

Slot: NA

Port: NA

Frequency (KHz): NA

Online DCL: DCL-A

DCL Redundancy Mode: Off

DCL DB Init Switch: Default

Self Test Result: OK

Alarm Relay State: On

Inverted Alarms: No

Matrix Mode: Bidirectional

Done

Figure 3-2. DXC Information Dialog Box

Table 3-2. DXC Information Parameters

Parameter	Possible Values / Remarks
IP Address	Address of the selected WAN agent (double-clicked in the WAN submap)
Type	The type of WAN agent DXC-30, DXC-30E, DXC-10A, DXC-8R
Clock Source	Master, Fallback, Internal
Master Clock Source Group	Master timing reference for the DXC
Type	Main source for DXC timing Internal, Rx Clock, Station.
Slot	The slot containing the card on which the master clock is located IO-1..IO-15
Port	The port through which the master clock signal is received by the DXC internal-1..internal-30, external-1..external-16, None
Frequency (KHz)	Frequency of the station clock NA, 1544, 2048 KHz

Table 3-2. DXC Information Parameters (Cont.)

Parameter	Possible Values / Remarks
Fallback Clock Source Group	Alternate (fallback) timing reference for the main link, to be used in case the master clock fails.
Type	Alternate source for the DXC timing Rx Clock, Station, None
Slot	Slot containing the card on which the fallback clock is located IO-1..IO-15
Port	Port through which the fallback clock signal is received by the DXC Internal-1..internal-30, external-1..external-16, None
Frequency (Khz)	Frequency of the station clock NA, 1544, 2048 KHz
Online DCL	Active DCL card of the DXC DCL-A, DCL-B
DCL Redundancy Mode	Redundancy state of the DCL cards On, Off
DCL DB Init Switch	This parameter determines which DXC configuration will be loaded after the DXC is turned off for a short time and then turned on again NVRAM - Latest saved configuration parameters (DB INIT DIP switch = OFF) Default - Default configuration parameters (DB INIT DIP switch = ON)
Self Test Result	Result of the DXC self-test, which was performed by the active DCL card OK, Failed
Alarm Relay State	State of the Alarm Relay On, Off
Inverted Alarms	Indicates the status of the alarm. If a problem exists for a long time, and the user does not want to see its alarm, the alarm status can be inverted. When an alarm has been inverted, it will appear only when the problem has been fixed Yes, No
Matrix Mode	Indicated the matrix mode for the TS assignment Bidirectional, Unidirectional

Setting DXC Agent System Information

The **System Info** command displays physical information about the selected DXC.

➤ To update the system information:

1. From the **Configuration** menu, select **System Info...**

The System Information dialog box appears ([Figure 3-3](#)).

2. Enter the required changes. You may update **Name, Contact, Location** and **Number of Interfaces**.

[A.1] 172.18.122.66: System Information

Description: DXC-DCL3 7.10

Object ID: radDXC30

Name: dxc1

Contact: Rad Data Communication

Location: Rad Data Communication

System Up Time: 1 days 07:38:49

Number of Interfaces: 2

Set Cancel Refresh

Figure 3-3. System Information Dialog Box

Displaying DXC Agent Interface Information

The **Interface Info** command displays information about the DXC connection to the management station.

➤ **To view DXC interface information:**

- From the **Configuration** menu, select **Interface Info...**

The Interface Info dialog box appears ([Figure 3-4](#)).

[A.1] 172.18.122.66: Interface Information

Index: 1

Description: SP2

Type: other

Oper. Status: up

MTU: 400

Speed(bps): 0

Done

Figure 3-4. Interface Information

Setting the Date Format

➤ **To set the Agent date format:**

- From the **Configuration** menu, select **Date Format** followed by one of the following formats for the date:
 - European (DD/MM/YYYY)

- American (MM/DD/YYYY)
- YYYY-MM-DD
where DD = day, MM = month and YYYY = year.

Setting Date & Time

► To set the Agent date and time:

1. From the Configuration menu, select Date & Time...
The Date & Time Setup dialog box appears ([Figure 3-5](#)).
2. Enter the correct parameters.
3. Click <Set>.

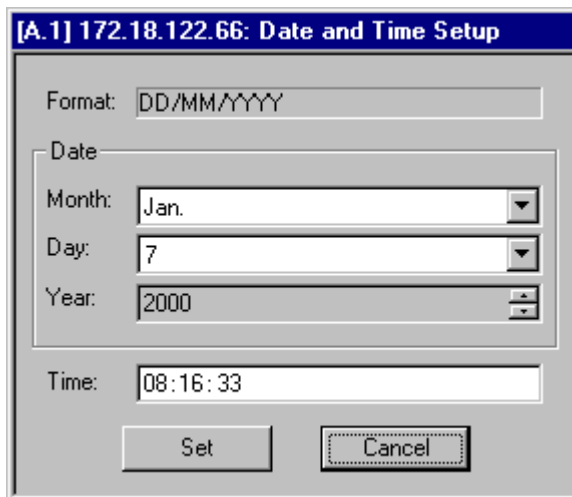


Figure 3-5. Agent Date and Time

Table 3-3. DXC Date & Time Setup Parameters

Parameter	Possible Values / Remarks
Format	This parameter is read-only European (DD/MM/YYYY), American (MM/DD/YYYY) or YYYY-MM-DD
Date	Date according to the DXC's own real-time clock
Month	Month
Day	Day
Year	Year
Time	Time according to the DXC's own real-time clock Time format is hh:mm:ss

Viewing the DXC Agent DCL Configuration

The **DCL Config** command enables you to view DCL card configuration data if one or two DCL.2 or DCL.3 cards are installed in a DXC-30, DXC-30E or a DXC-8R (not available in DXC-10A).

➤ **To view DCL configuration:**

- From the Configuration menu, select **DCL Config...**

The DCL Configuration dialog box appears ([Figure 3-6](#)). All parameter are read-only.

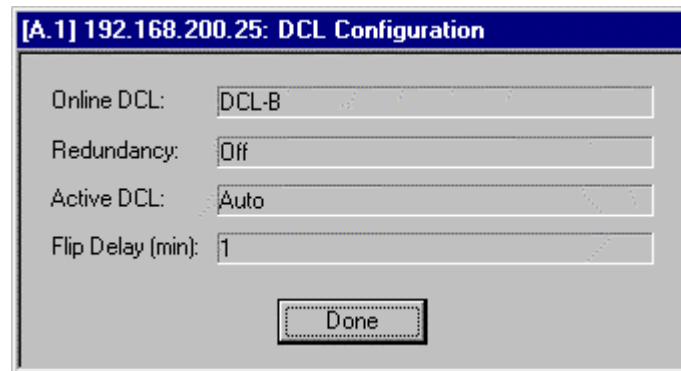


Figure 3-6. DCL Configuration

Table 3-4. DCL Configuration Parameters

Parameter	Possible Values / Remarks
Online DCL	The active DCL card of the DXC Auto, DCL-A, DCL-B
Redundancy	Redundancy is available only when two DCL.2 or DCL.3 cards are installed in a DXC On, Off
Active DCL	DCL card currently used by the DXC Auto - agent determines the active DCL card DCL-A - DCL card installed in the CL-A slot is the active DCL card DCL-B - DCL card installed in the CL-B slot is the active DCL card
Flip Delay (min)	Minimum acceptable interval between consecutive decisions to flip between the DCL.2 or DCL.3 cards 1, 2, 3, 4 minutes
Flip Upon STN CLK Fail	Yes, <u>No</u>

Copying a DXC Agent DCL Configuration

The **Copy DCL DB** command copies the DXC configuration from the offline DCL to the online DCL.

Note *This option is enabled only when two DCL.2 cards exist, and there is communication with the agent.*

➤ **To copy a DCL configuration:**

1. From the **Configuration** menu, select **Copy DCL DB**. This operation requires confirmation.

The following message appears: "Online DB will be lost".

2. **<OK>** to copy the DCL configuration.

The system copies the DXC configuration to the online DCL.

Time Slot Assignment

As in the Edit Configuration Mode, you may display the TS assignments at the port level and at the TS level. The DXC Time Slot Routing is detailed in the DXC - Edit Configuration Operations chapter. The Time Slot Routing in the Agent Mode is identical to that of the Edit Mode except that, in the Agent Mode, you can view the actual time slot assignments for all ports (read only) but you cannot connect or disconnect the time slots.

IO Redundancy

The **IO Redundancy Table** command enables you to view redundancy parameter for the DXC.

➤ **To view IO Redundancy Table parameters:**

1. From the **Configuration** menu, select **IO Redundancy** followed by **Table...**

The IO Redundancy Table dialog box appears (*Figure 3-7*).

- Click **<Refresh>** to update value of the Rdn Online parameters in the table.
- Click **<Flip Cmd>** to Flip from the current online slot to the redundant slot.

Note The FLIP Cmd button is enabled only when an entry is selected where the entry's Redundancy Mode=Y Cable and Recovery Mode=Manual.

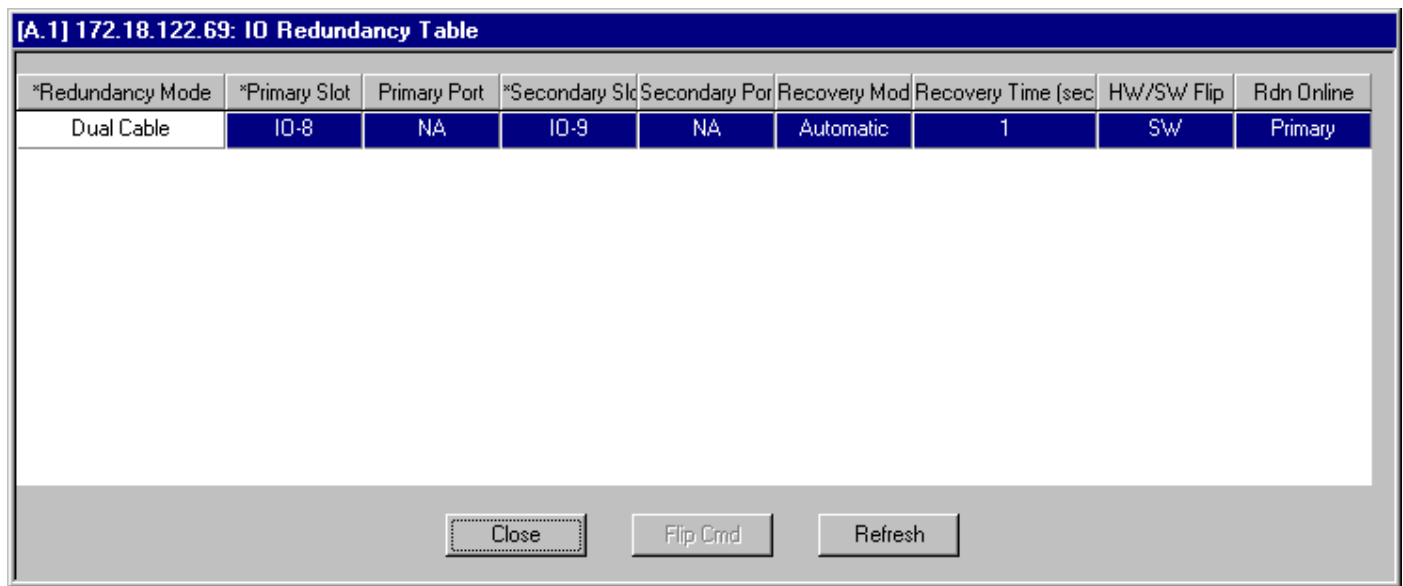


Figure 3-7. IO Redundancy Table Dialog Box

Clicking on the Redundancy Mode, Primary Slot or Secondary Slot Fields can reorder the Redundancy table's fields. The parameters will be displayed in the following order: Y Cable, Dual Cable and Single Slot Protection. Additionally every group will be displayed according to Primary Slot and Port in ascending order.

Table 3-5. Redundancy Table Parameters

Parameter	Possible Values / Remarks
Redundancy Mode	Indicates the Redundancy Mode for the DXC card Y Cable, Dual Cable and Single Slot Protection
Primary Slot	Indicates the Primary Slot for the card IO-1..IO-15
Primary Port	Indicates the Primary Port for the card NA, external-1..external-8, internal-1..internal-2
Secondary Slot	Indicates the Secondary Slot for the card IO-1..IO-15.
Secondary Port	Indicates the Secondary Port for the card NA, external-1..external-8, internal-1..internal-2.
Recovery Mode	Indicates the recovery mode for the card Automatic and Manual
Recovery Time (sec)	Indicates the recovery time in seconds 1..99
HW/SW Flip	Indicates Hardware/Software Flip NA, HW or SW
Rdn Online	Indicates Online Redundancy Primary and Secondary

► **To view IO Flip Events:**

- From the **Configuration** menu, select **IO Redundancy** followed by **Flip Events...**

The IO Flip Events Window appears ([Figure 3-8](#)).

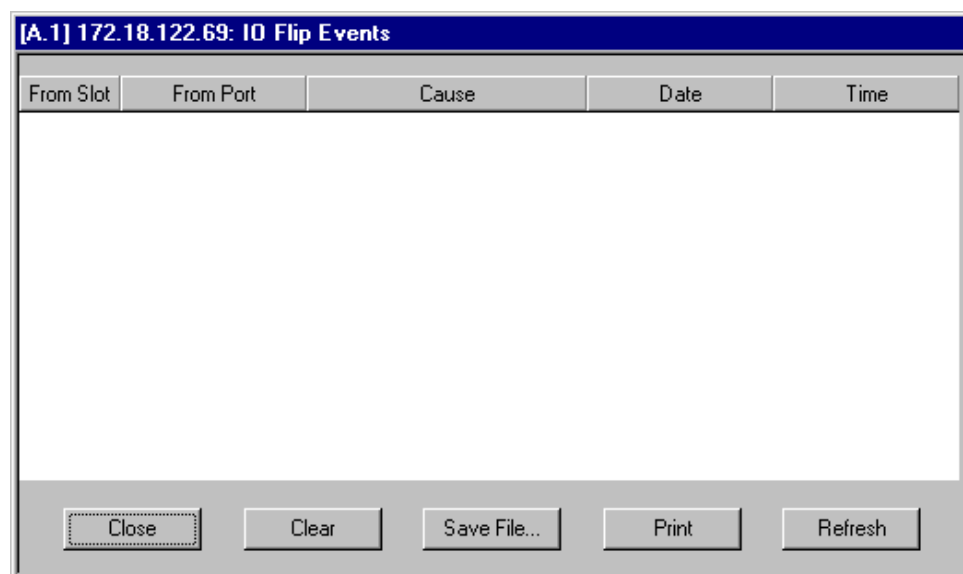


Figure 3-8. IO Flip Events Window

Table 3-6. IO Flip Events Parameters

Parameter	Possible Values / Remarks
From Slot	Indicates the From Slot IO-1..IO-15
From Port	Indicates the From Port NA, external-1..external-8, internal-1..internal-2
Cause	Text sent by the Agent
Date	Date displayed in currently selected format
Time	Time in hh:mm:ss format

Bandwidth Utilization

The **Bandwidth Utilization** command enables you to view the bandwidth utilization of the internal BUS link.

➤ **To view bandwidth utilization for the internal bus link:**

1. From the Configuration menu, select Bandwidth Utilization...
The Bandwidth Utilization dialog box appears ([Figure 3-9](#)).
2. Click on a slot/port to see its bandwidth utilization.

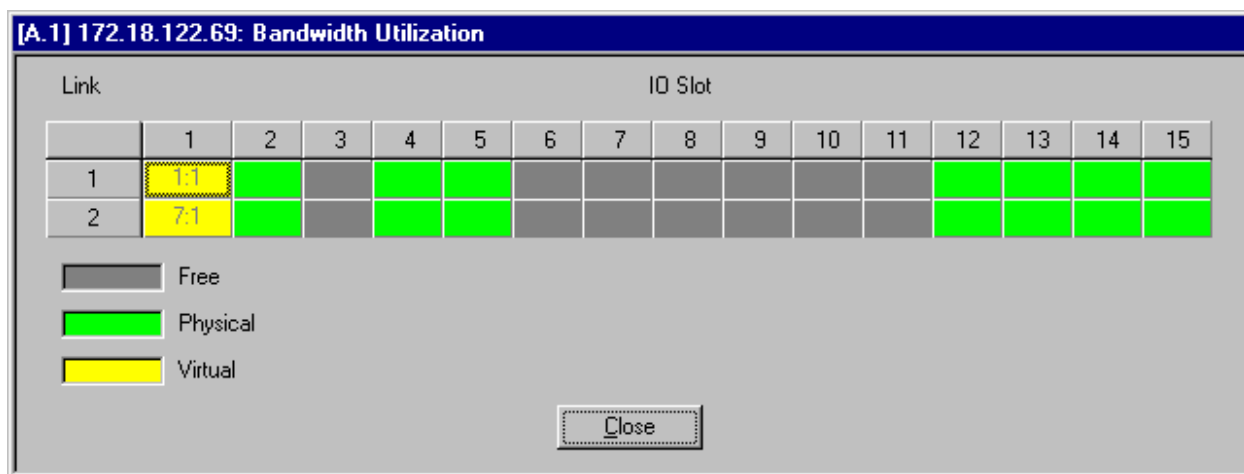


Figure 3-9. Bandwidth Utilization Window

Table 3-7. Bandwidth Utilization Parameters

Parameter	Possible Values / Remarks
Card Type	Type of card in slot
Port Utilization	0-100% This field is applicable only for Physical and Virtual cells

Resetting the Device

The **Reset** command resets the device.

➤ **To reset the device:**

1. From the **Configuration** menu, select **Reset**
A confirmation window appears.
2. <**OK**> to confirm Reset.

3.3 Fault Menu

The **Fault** menu contains options for displaying active alarms for the DXC, viewing a history log of alarms and viewing DXC self-test results.

➤ **To view all active DXC alarms:**

- From the **Fault** menu, select **Alarms** followed by **Display** and **All...**

The DXC All Active Alarm List appears ([Figure 3-10](#)). This table displays active system, card and port alarms.

[A.1] 172.18.122.66: DXC All Active Alarm List									
No.	Code	Slot	Port	Description	Severity	State	Mask/Invert	Counter	
1	10	IO-7		MODULE WAS REMOVED	event	on	None	2	
2	16	IO-7		PROGRAMMED,INSTALLED MODULE MISMATCH	major	off	None	2	
3	16	IO-11		PROGRAMMED,INSTALLED MODULE MISMATCH	major	off	None	2	
4	16	IO-15		PROGRAMMED,INSTALLED MODULE MISMATCH	major	off	None	2	
5	35	IO-5	external-1	LOCAL SYNC LOSS	major	on	None	2	
6	97	IO-5	external-1	EXT UNIT RTS OFF	minor	on	None	2	
7	35	IO-5	external-2	LOCAL SYNC LOSS	major	on	None	2	
8	35	IO-5	external-3	LOCAL SYNC LOSS	major	on	None	1	
9	35	IO-5	external-4	LOCAL SYNC LOSS	major	on	None	1	
10	35	IO-5	external-5	LOCAL SYNC LOSS	major	on	None	1	

Figure 3-10. DXC All Active Alarm List

Table 3-8. DXC All Active Alarm List Parameters

Parameter	Possible Values / Remarks
No.	Index number of the alarm
Code	Code which indicates a certain alarm description
Slot	Slot number of the card in which the alarm originated. This parameter is not applicable for system level alarms IO1 - IO15, CL-A, CL-B
Port	Port number in which the alarm originated. This parameter is applicable only for port alarms external-1..external-8, internal-1..internal-30
Description	Description of the alarm
Status	Minor, Major
Mask/Invert	Indicates the status of the alarm: Mask, Invert, None

Displaying System Level Alarms

The **Display>System Level** command displays a list of active unmasked alarms for the selected DXC only.

- **To view all active DXC system level alarms:**
 - From the **Fault** menu, select **Alarms**, followed by **Display** and **System Level...**

The DXC Active Alarm List appears ([Figure 3-11](#)). This table displays active system alarms.

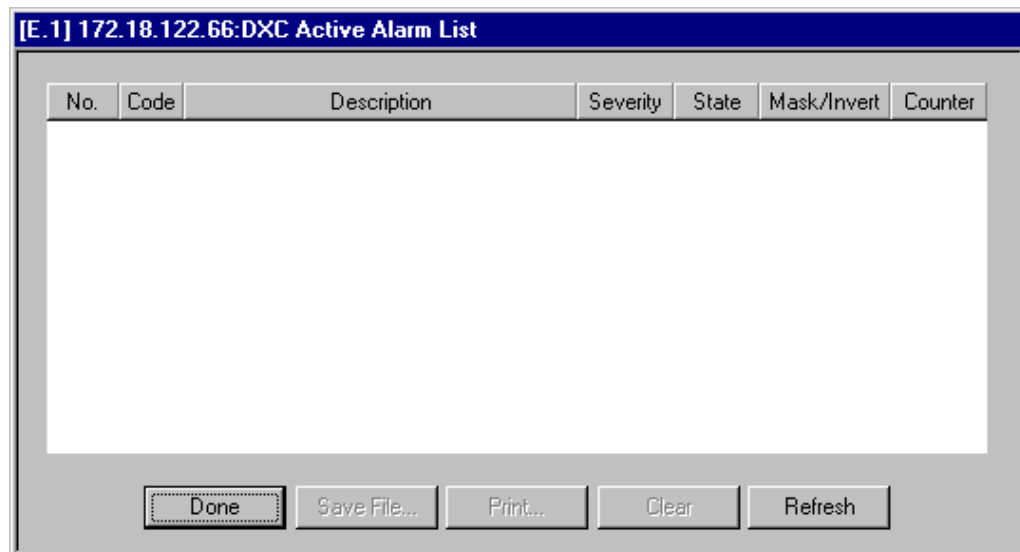


Figure 3-11. DXC Active Alarm List

Table 3-9. DXC Active Alarm List Parameters

Parameter	Possible Values / Remarks
No.	Index number of the alarm
Code	Code which indicates a certain alarm description
Description	Description of the alarm
Status	State of the alarm: Minor , Major
Mask/Invert	Indicates the status of the alarm: Mask , Invert , None
Counter	

Clearing DXC Agent Alarms

You can clear system level alarms or all active alarms from the system database.

➤ **To clear active system level alarms:**

- From the **Fault** menu, select **Alarms** followed by **Clear**.

The system does not request confirmation for this operation.

➤ **To clear all active alarms:**

- From the **Fault** menu, select **Alarms** followed by **Clear All**.

The system does not request confirmation for this operation.

Alarms Configuration

The **Fault>Alarms>Configuration>** command allows you to set parameters for Alarm Severity, Alarm Attributes and Alarm Reports.

Setting Alarm Severity

Using the **Severity** command, you can set the level of severity for the various types of alarms.

➤ **To set severity levels for alarms:**

1. From the **Fault** menu, select **Alarms**, followed by **Configuration** and then **Severity**.

The Alarms Severity dialog box appears ([Figure 3-12](#)). The Alarms Severity dialog box displays a list of alarms, their types and a severity level.

2. Select a Severity level and click **<Set>**.

The new severity level appears in the Alarms Severity dialog box.

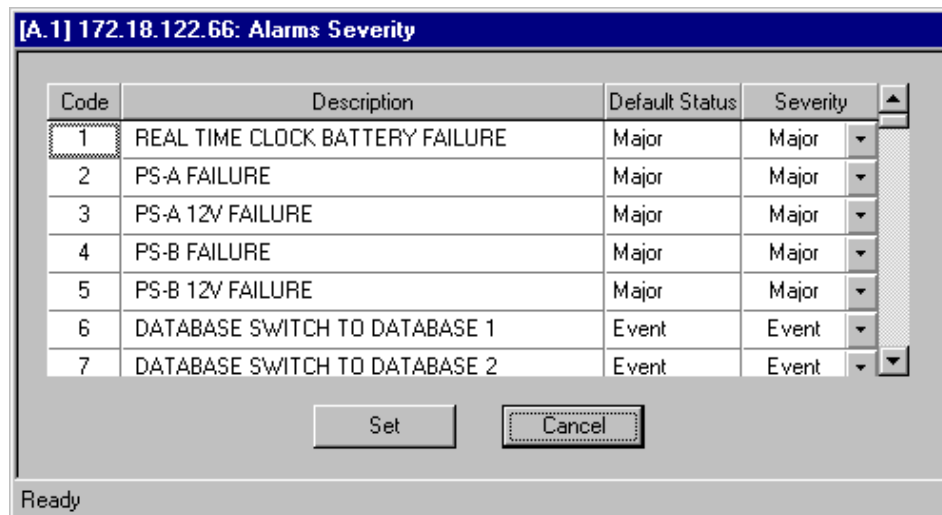


Figure 3-12. Alarms Severity Dialog Box

Table 3-10. Alarms Severity Parameters

Parameter	Possible Values / Remarks
Code	Identifier of the alarm
Description	Brief description of the alarm
Default Status	Event, Minor, Major
Severity	The effect level of the alarm: Warning, Event, Major, Minor, Critical

Setting Alarm Attributes

Using the **Attributes** command, you can configure certain alarm filters for different selected DXC alarms. The defined attributes pertain to specific alarm codes, slots and ports.

➤ **To view alarm attributes:**

- From the **Fault** menu, select **Alarms** followed by **Configuration** and then **Attributes**.

The Alarm Attributes dialog box appears ([Figure 3-13](#)).

[A. 1] 172.18.122.66: Alarms Attributes

Filter Window (sec) 15 1 255

Display Criteria

Level: ☒ All ☐ System Only ☐ Card and Ports ☐ Port

Slot: Port:

Attributes: ☒ All ☐ Mask ☐ Invert ☐ Filter

^Alarm	Default	*Slot	Port	Mask	Invert	Filter	Filter Set	Filter Reset
1 - REAL TIME CLOCK BATTERY FAILURE	Major	NA	NA	Yes	No	No	0	0

Ready

Figure 3-13. Alarm Attributes Dialog Box

Table 3-11. Alarm Attributes Parameters

Parameter	Possible Values / Remarks
Filter Window (sec)	Number of seconds system waits before sending traps 1..255 Note: For Agent Version 7.0, only 1..30 is supported
Alarm	Identifier of the alarm that retains the attributes in this list and a brief description of the alarm
Slot	Slot on which the attributes will be activated (if relevant) All, PS-A, PS-B, CL-A, CL-B, IO-1 to IO-15
Port	Port of the selected slot on which the attributes will be activated (if relevant) All, external-1..external-8, external-1/L1, external-1/L2, external-2/L1, external-2/L2, internal-1 to internal-28, SP, NP, ETH
Mask	A masked alarm: Does not affect the operational status of the selected DXC. Is not logged in the alarm buffer. Does not generate a trap. Does not cause a LED on the DXC panel to turn on. Appears in the Active Alarm List. Cannot be cleared during a Clear or Clear All operation. Alarms will always be saved. They will not be lost after power-up or removal of the card. No, Yes

Table 3-11. Alarm Attributes Parameters (Cont.)

Parameter	Possible Values / Remarks
Invert	Alarm that retains an inverted status. For example, suppose that you don't want to see an alarm in the Alarm list all the time, but you want to know when it was fixed. The Invert status hides the alarm, but then "activates" informing you that it is fixed. - Only active state alarms with a severity level of Warning, Major, Minor or Critical can be inverted - An inverted alarm cannot be masked by the Mask function - An inverted alarm cannot be cleared by an Alarms>Clear or Alarms>Clear All command Alarms will always be saved. It will not be lost after power-up or removal of the card Yes, No

➤ **To add a new set of alarm attributes:**

1. In the **Alarm Attributes** dialog box click **<Add>**.
The Add Alarm Attributes dialog box appears.
2. In the **Add Alarm Attributes** dialog box, set the attribute parameters as required. The **Set** button is enabled only when the value for **Mask** or **Invert** is set to **Yes**.
3. Click **<Set>**.
The new alarm attributes configuration is downloaded to the selected DXC, and also appears in the Alarm Attributes list.

➤ **To change an existing alarm attributes configuration**

- In the **Alarm Attributes** dialog box, select an entry and then click **<Change>**.
The Change Alarm Attributes dialog box appears.

The parameters in the Change Attributes dialog box are identical to the parameters in the Add Alarm Attributes dialog box. You may change the Mask and Invert parameters only.

Sorting Alarm Attributes

If the Alarm Attributes list contains at least two entries, you can display entries according to alarm level type.

➤ **To sort the alarm attributes:**

1. In the Level group of the Alarm Attributes dialog box, select the alarm level type that you want to display. The available options are **All**, **System only**, **Card and Ports** and **Port**.
2. If the alarm level type is **Card and Ports**, select a slot. The available options are **PS-A**, **PS-B**, **CL-A**, **CL-B**, **IO-1** to **IO-15**.

3. If the alarm level type is **Port**, select a slot and a port. The available options are **NA**, **All**, **external-1..external-8**, **external-1/L1**, **external-1/L2**, **external-2/L1**, **external-2/L2**, **internal-1** to **internal-28**.
 4. Click **<Apply>**.

The alarm types that match the selected level appear in the Alarm Attributes table.
- **To display attributes of all alarms in the selected level in the Alarm Attributes table:**
 - In the Attributes group, select **All**. Click **<Apply>**.
 - **To display attributes of masked alarms (Mask = Yes or Yes and Save) within the selected level in the Alarm Attributes table:**
 - In the Attributes group, select **Mask**.
 - If the selected level is **All**, all masked alarms appear in the Alarms Attributes table.
 - If the selected level is **System**, only masked alarms whose Slot and Port are **NA** appear in the Alarms Attributes table.
 - If the selected level is **Card and Ports**, only masked alarms whose slot matches the Level group's Slot parameter appear in the Alarms Attributes table.
 - If the selected level is **Ports**, only masked alarms whose slot and port matches the Level group's Slot and Port parameters appear in the Alarms Attributes table.
 - **To display attributes of inverted alarms (Invert = Yes) within the selected level in the Alarm Attributes table:**
 - In the Attributes group, select **Invert**.
 - If the selected level is **All**, all inverted alarms appear in the Alarms Attributes table.
 - If the selected level is **System**, only inverted alarms whose Slot and Port are **NA** appear in the Alarms Attributes table.
 - If the selected level is **Card and Ports**, only inverted alarms whose slot matches the Level group's Slot parameter appear in the Alarms Attributes table.
 - If the selected level is **Ports**, only inverted alarms whose slot and port matches the Level group's Slot and Port parameters appear in the Alarms Attributes table.

Defining Scope of Alarm Reports

Using the Reports command, you can define the scope, type and severity of alarm reports that you will receive at the network management station.

► To define an alarm report:

1. From the **Fault** menu, select **Alarms** followed by **Configuration** and then **Reports**.

The Alarm Report dialog box appears ([Figure 3-14](#)). In the **Alarm Report** dialog box, you can set the severity criteria for reporting alarms.

2. Set the severity levels in each field.
3. Click <**Set**>.

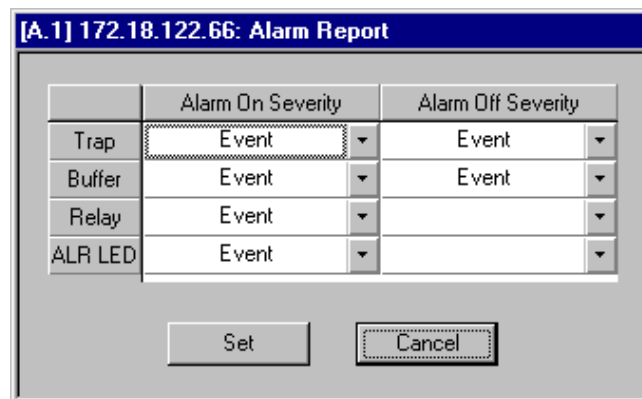


Figure 3-14. Alarm Report Dialog Box

Table 3-12. Alarm Report Parameters

Parameter	Possible Values / Remarks
Trap	Defines whether you want to receive traps for all alarms or for only those alarms of at least a certain severity Alarm On Severity: Minimum level of severity required for sending a trap to the network management station. Trap severity must be equal or higher than buffer severity Alarm Off Severity: Maximum level of severity allowed for a trap not to be sent to the network management station No Report, Minor, Major
Buffer	Defines whether you want all alarms to be entered into the alarm buffer or only those alarms of at least a certain severity. Traps are only sent if alarm is entered in buffer Alarm On Severity: Minimum level of severity required for entering alarm in buffer. Trap severity must be equal or higher than buffer severity. Alarm Off Severity: Maximum level of severity allowed for not entering alarm in buffer. No Report, Minor, Major

Table 12. Alarm Report Parameters (Cont.)

Parameter	Possible Values / Remarks
Relay	Define whether you want to receive the beep sound of the Relay contact for all alarms or for only those alarms of at least a certain severity Alarm On Severity: Minimum level of severity required for sending a beep sound to the network management station No Report, Minor and Major
ALR LED	CL Alarm Led is ON when worst severity of all current alarms of the DXC is equal or higher than the selected Alarm On Severity

Displaying the History Log

The history log contains all the alarms listed in the DXC's alarm buffer. The buffer's capacity is 256 alarms. You may view and print its contents.

- **To display all the alarms in the DXC's alarm buffer:**
 - From the **Fault** menu, select **History Log** and **List...**

The Alarm Buffer List appears (Figure 3-15).

No.	Code	Description	Slot	Port	Status	Date	Time
1	111	STM CRITICAL ALARM	IO-11	external-1	Major	07/01/2000	05:46:5
2	29	SIGNAL LOSS	IO-11	external-1	Major	07/01/2000	05:46:5
3	47	MANAGEMENT PORT IS DOWN	IO-8	external-2	Off	07/01/2000	05:46:4
4	16	PROGRAMMED,INSTALLED MODULE MISMATCH	IO-11	--	Off	07/01/2000	05:46:4
5	16	PROGRAMMED,INSTALLED MODULE MISMATCH	IO-7	--	Off	07/01/2000	05:46:4
6	16	PROGRAMMED,INSTALLED MODULE MISMATCH	IO-11	--	Major	07/01/2000	05:43:5
7	42	EXCESSIVE ERR RATIO	IO-8	external-1	Off	07/01/2000	05:43:3
8	42	EXCESSIVE ERR RATIO	IO-8	external-1	Major	07/01/2000	05:43:2
9	41	BPV ERROR	IO-8	external-1	Minor	07/01/2000	05:43:2
10	29	SIGNAL LOSS	IO-8	external-1	Off	07/01/2000	05:43:2

Figure 3-15. Alarm Buffer List

The Alarm Buffer List displays all recorded alarms from system, card and port levels since the last time the log was cleared. If the list is long, you can click the scroll bar or scroll arrows to display more entries.

Table 3-13. Alarm Buffer List Parameters

Parameter	Possible Values / Remarks
No.	Index number of the alarm
Code	Code which indicates a certain alarm description
Description	Description of the alarm
Slot	Slot number of the card in which the alarm originated. This parameter is not applicable for system level alarms IO1 - IO15, CL-A, CL-B.
Port	Port number in which the alarm originated. This parameter is applicable only for port alarms external-1, external-2.
Status	State of the alarm Minor, Major
Date	Date when the alarm occurred
Time	Time when the alarm occurred

➤ **To clear all the alarms from the DXC's alarm buffer:**

- From the **Fault** menu, select **History Log** and **Clear**.

The system does not request confirmation for this operation.

Displaying DXC Agent Self-Test Results

When powered, the DXC runs a self-test to detect hardware failures and to provide circuit-level diagnostics data. The **Self-Test** command displays the results of the selected DXC's self-tests.

➤ **To display the DXC's self-test results:**

- From the **Fault** menu, select **Self Test**.

The Self Test Results dialog box appears ([Figure 3-16](#)).

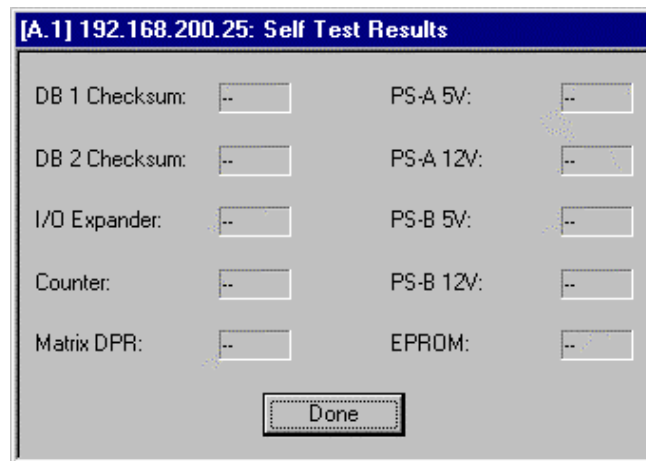


Figure 3-16. DXC Agent Self test Results

This dialog box lists all possible detectable agent failures and the status of each failure. The available status options are:

On	Failure exists.
--	Self-Test was successful.

Diagnostics Menu

The errors encountered while BERT testing can be displayed.

Displaying BERT Errors

➤ **To display the BERT Errors:**

- From the **Diagnostics** menu, select **BERT Errors...**

The BERT Errors window appears ([Figure 3-17](#)).

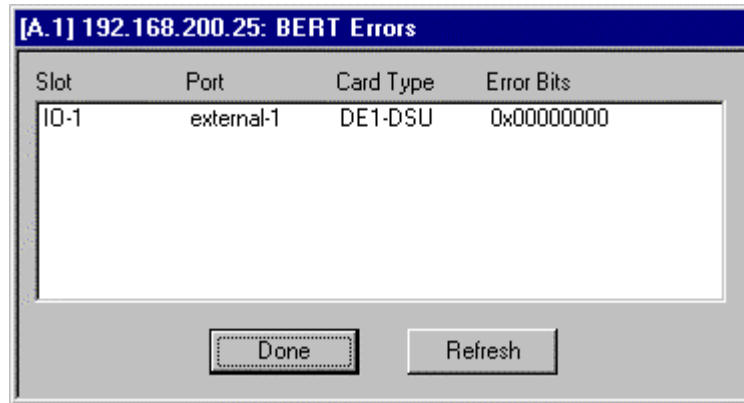


Figure 3-17. BERT Errors

Table 3-14. BERT Errors

Parameter	Possible Values / Remarks
Slot	The selected slot
Port	The selected port External-1..External-8 Internal-1..Internal-28
Card Type	Type of card DE1, DE1/A, DE1/F, DE1-HDSL, DE1-HDSL/S, DT1, DT1/F, DT1-HDSL, DT1-HDSL/S, D4E1, D8E1, D4T1, D8T1
Error Bits	Lists the errored bits for the selected port

Closing Agent View

➤ **To close the agent part of the application window (display only edit view):**

- From the **Window** menu, select **Agent View** followed by **Off**.

Only the Edit Configuration window is displayed.

Options Menu

The Manager List

The Manager List displays addresses of management stations that can receive the DXC's traps. To receive an agent's traps, the management station must have its own IP address in the Manager List.

Note *The list may contain up to ten entries.*

➤ **To display the Manager List:**

- From the **Options** menu, select **Manager List**.

The Manager List dialog box appears ([Figure 3-18](#)).

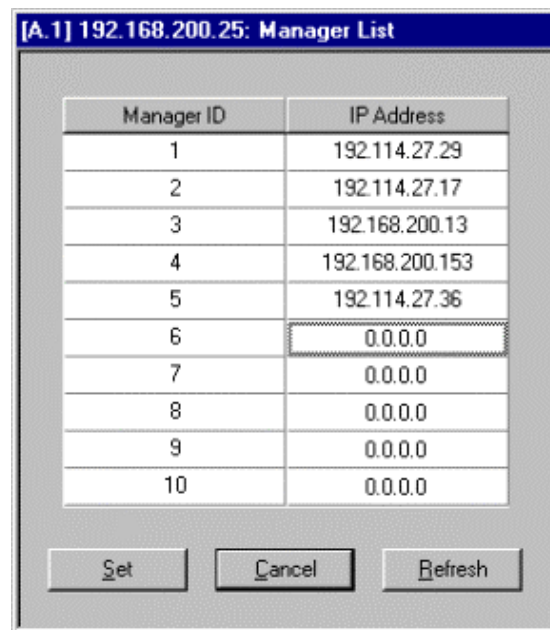


Figure 3-18. Manager List

The Manager List displays the following information:

- Manager Id:** Index number in the list of the management station.
- IP Address:** IP address of the management station.

➤ **To edit/add an entry in the Manager List:**

- Click in the IP Address field.
- Edit/add the new IP address.
- After editing all desired IP addresses, click **<Set>**.

Read Alarms Description

The **Read Alarms Description** command enables users to cause the NMS to get the alarm descriptions from the agent. This is useful when there are

communication problems with the agent and the complete list of alarms is not displayed properly.

➤ **To load the Alarm Descriptions Table:**

- From the Options menu, select Read Alarm Descriptions.

If the whole alarm table is received successfully, the following window appears.



If for any reason, the loading of the table is interrupted, another message "Alarm description table loading interrupted" will be displayed.

3.4 Agent Card Operations

Note If two power supplies exist in the chassis, the second one is visible only when powered ON.

Table 3-15 lists the different management options for the card level.

Note Card Level Configuration menu options are dependent upon the selected card.

Table 3-15. Card Level Management Options

	Tasks - Configuration	Dialog Box and Parameter Location	Path
Configuration Card Info... BERT Parameters... Zoom Reset	Displaying zoomed card view	Zoomed Card View (Figure 3-19)	Configuration ➤Zoom
	Displaying card information	Card Information dialog box (Figure 3-20)	Configuration ➤Card Info...
	Displaying BERT parameters	BERT Parameters Dialog Box (Figure 3-21)	Configuration ➤BERT Parameters...
	Resetting card HW	See Resetting Card HW	Configuration ➤Reset
Fault Alarms ▶	Viewing active card alarms	Card & Port Active Alarm List (Figure 3-22)	Fault ➤List ➤Card & Ports...
	Viewing all card level alarms	Card Active Alarm List (Figure 3-23)	Fault ➤List ➤Card Level...

Zooming to the Card View

You may display a more detailed view of the cards, including individual ports.

Note *Zoom is disabled when a red border outlines the selected card.*

➤ **To open the Card View of a specific card:**

- In the Agent Mode, click the card and from the **Configuration** menu, select **Zoom** or double-click the card.

The zoomed card appears ([Figure 3-19](#)).

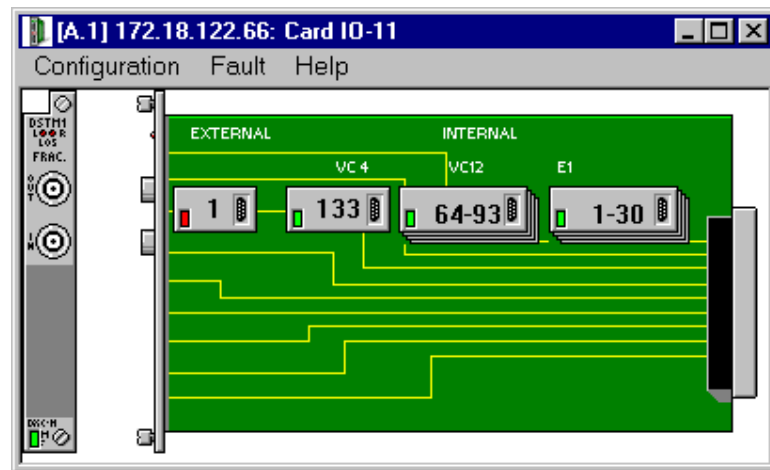


Figure 3-19. Sample Zoomed Card

Note *You cannot zoom in on PS cards (1,2), empty slots, unknown cards or offline DCL cards.*

Displaying Card Information

➤ **To display information about the selected card:**

- Select the card and from the **Configuration** menu, select **Card Info...**

The Card Information dialog box appears ([Figure 3-20](#)). All information in this dialog box is read-only.

Figure 3-20. Sample Card Information

BERT Parameters

BERT parameters can be displayed from card view.

Note At card level, BERT Parameters are only available for D8U and D16U cards. The information displayed is read-only.

- From the **Configuration** menu, select **BERT Parameters...**

The Card BERT Parameters dialog box appears ([Figure 3-21](#)).

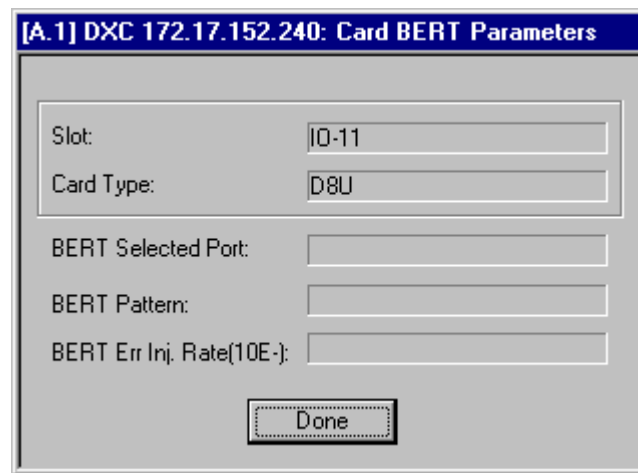


Figure 3-21. BERT Parameters Dialog Box

Table 3-16. BERT Parameters

Parameter	Possible Values / Remarks
BERT Selected Port	None, External-x, External-x/B1, External-x/B2, External-x/D where x =: 1..8 for D8U, 1..16 for D16U
BERT Pattern	2E3-1, 2E4-1, 2E5-1, 2E6-1, 2E7-1, 511, 2E10-1, 2047, 2E17-1, 2E18-1, QRSS, 2E21-1, 2E22-1, 2E25-1, 2E28-1, 2E29-1, 2E31-1 and 2E32-1.
BERT Error Inject Rate (10E-)	The rate of BERT injection No Error, 1, 2, 3, 4, 5, 6, 7

Resetting Card HW

- To reset a card's HW.
 - From the **Configuration** menu, select **Reset**

3.5 Displaying Card Faults

The Card View **Fault** menu contains options for displaying active alarms for the selected card.

Displaying Card and Port Alarms

The **Display>Card & Ports** command displays a list of active alarms for the selected card and its ports.

➤ **To view all active alarms for the selected card:**

From the **Fault** menu, select **Alarms** followed by **Display** and then **Card & Ports...**

The Card & Ports Active Alarm List appears ([Figure 3-22](#)) displaying active card and port alarms. If the list is long, you can click the scroll bar or scroll arrows to display more entries.

No.	Code	Port	Description	Severity	State	Mask/Invert	Counter
1	35	external-1	LOCAL SYNC LOSS	major	on	None	2
2	97	external-1	EXT UNIT RTS OFF	minor	off	None	1
3	35	external-2	LOCAL SYNC LOSS	major	on	None	1
4	35	external-3	LOCAL SYNC LOSS	major	on	None	1
5	35	external-4	LOCAL SYNC LOSS	major	on	None	1
6	35	external-5	LOCAL SYNC LOSS	major	on	None	1
7	35	external-6	LOCAL SYNC LOSS	major	on	None	1
8	35	external-7	LOCAL SYNC LOSS	major	on	None	1
9	35	external-8	LOCAL SYNC LOSS	major	on	None	1

Figure 3-22. Card & Ports Active Alarm List

Table 3-17. Card & Ports Active Alarm List Parameters

Parameter	Possible Values / Remarks
Slot	Slot number of the card in which the alarm originated. This parameter is not applicable for system level alarms IO1 - IO15, CL-A, CL-B
Card Type	Type of card assigned to the selected slot
No.	Index number of the alarm
Code	Code which indicates a certain alarm description
Port	Port number in which the alarm originated. This parameter is applicable only for port alarms internal-1..internal-30 or external-1..external-8
Description	Description of the alarm
Severity	Severity of the alarm: Minor, Major
State	On, Off
Mask/Invert	Status of the alarm: Mask, Invert, None

Displaying Card Level Alarms

The **Display>Card Level** command displays a list of active alarms for the selected card only.

► **To view all active card level alarms:**

- From the **Fault** menu, select **Alarms** followed by **Display** and then **Card Level**.

The Card Active Alarm List appears ([Figure 3-23](#)).

No.	Code	Description	Severity	State	Mask/Invert	Counter
1	16	PROGRAMMED, INSTALLED MODULE MISMATCH	major	off	None	2

Figure 3-23. Card Active Alarm List

Table 3-18. Card Active Alarm List Parameters

Parameter	Possible Values / Remarks
Slot	Slot number of the card in which the alarm originated. This parameter is not applicable for system level alarms IO1 - IO15, CL-A, CL-B
Card Type	Type of card assigned to the selected slot
No.	Index number of the alarm
Code	Code which indicates a certain alarm description
Description	Description of the alarm
Severity	Severity of the alarm: Minor, Major
State	On, Off
Mask/Invert	Status of the alarm: Mask, Invert, None

You can clear either card level alarms, or all active card and port alarms from the system database.

➤ **To clear only active card level alarms:**

- From the **Fault** menu, select **Alarms** and **Clear**.

The system does not request confirmation for this operation.

➤ **To clear all active card and ports alarms:**

- From the **Fault** menu, select **Alarms** and **Clear All**.

The system does not request confirmation for this operation.

3.6 Agent Port Operations

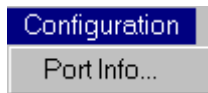
From the Card View, you may view configuration parameters and information about the card's individual ports, and run tests on the ports. Port operations are available when a port is selected. The menu options are differ depending on the selected port.

➤ **To select a port:**

- Click on the port.

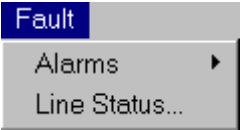
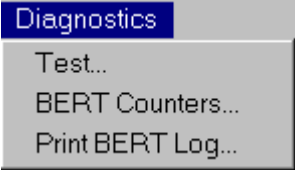
A selected port is outlined by a blue frame.

Table 3-19. Port Level Management Options



Tasks - Configuration	Dialog Box and Parameter Location	Path
Displaying port information	Port Information dialog box (Figure 3-24)	Configuration ➤Port Info ➤Information...
Displaying port software configuration	See Displaying Port Software Configuration	Configuration ➤Port Info ➤Software Configuration...
Displaying port redundancy data	See Displaying Port Software Configuration	Configuration ➤Port Info ➤Redundancy Data...
Configuring Far-End parameters	Far End Configuration dialog box (Figure 3-49)	Configuration ➤Far-End Config...
Displaying destination ports	DIM Port Destination Ports (Figure 3-50)	Configuration ➤Destination Ports...
Displaying Monitoring port configuration	Monitoring Port Parameters dialog box (Figure 3-51)	Configuration ➤Monitoring Port...

Table 19. Port Level Management Option (Cont.)

	Tasks - Fault	Dialog Box and Parameter Location	Path
	Displaying port alarms	Port Active Alarm List (Figure 3-54)	Fault ➡Display...
	Displaying port failures	Line Status dialog box (Figure 3-55)	Fault ➡Line Status...
	Tasks - Diagnostics	Dialog Box and Parameter Location	Path
	Running diagnostic tests	Testing dialog box (Figure 3-56)	Diagnostics ➡Test...
	Displaying BERT counter	BERT Counters Dialog Box (Figure 3-57)	Diagnostics ➡BERT Counters...
	Tasks - Statistics	Dialog Box and Parameter Location	Path
	Setting polling interval	Polling Interval dialog box (Figure 3-59)	Statistics ➡Polling Interval...
	Displaying current data statistics in table or graph	See Port Performance	Statistics ➡Port Performance ➡Current Table...
			Statistics ➡Port Performance ➡Current Graph...
			Statistics ➡Port Performance ➡Intervals Table...
	Displaying intervals data statistics in table or graph	See Port Performance	Statistics ➡Port Performance ➡Intervals Graph...

Displaying Agent Port Information

The **Information** command displays hardware configuration information and status data of the selected port.

➤ To display the port information about a specific port:

- From the **Configuration** menu, select **Port Info** followed by **Information...**

The Port Information dialog box appears. The information in this dialog box is read-only.

[A.1] 172.18.122.66: Port Information

Slot:

Port:

Card Type:

Info | SW Cfg | <SW Cfg

Port Type:

Active Status:

Test Status:

Alarm Status:

Interface Number:

Interface Type:

Done Refresh

Figure 3-24. Port Information

Table 3-20. Port Information Parameters

Parameter	Possible Values / Remarks
Slot	Slot number of the selected card CL-A, CL-B, IO-1..IO-15
Port	Type and number of the selected port external-1 .. external-8, external-1/L1, external-1/L2, external-2/L1, external-2/L2, internal-1 .. internal-28
Card Type	Type of the selected card DLC.2, DLC.2-ETH, DE1-DSU, DE1-LTU, DE1/F, DE1-HDSL, DE1-HDSL/S, DE3, DE3/F, D4E1, D8 E1, D4T1, D8T1, DHS, DIM-V35, DIM-RS422, DIM-RS530, DIM-HSSI, DIM-X21, DIM-10BaseT, DIM-E1, DT1-CSU, DT1-DSU, DT1/F, DT1-HDSL, DT1-HDSL/S, DT3 and DT3/F
Port Type	Type of the selected port: T1, E1 and HS

Active Status	Operational status of the selected port Not Used - port is not connected according to the active configuration. Offline - port is down (not working). Online - port is up (working). Offline Redundancy - port is down because it is redundant. Online Redundancy - port is redundant but works as the active link.
Test Status	Status of tests currently running On indicates that at least one test is running on the selected port Off indicates no testing
Alarm Status	Indicates status of active alarm: Major, Minor, Off
Interface Number	Unique interface number assigned to the selected port
Interface Type	Unique hardware interface type for the selected port: DSU, CSU - for T1 cards. DSU, LTU - for E1 cards. 10BaseT, V35, RS422, X21, etc. - for HS and DIM cards.

Displaying Port Software Configuration

The Software Configuration command displays information about the software parameters of the selected port.

- **To display the software configuration information about a specific port:**
 - Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Software Configuration...**

The Software Configuration dialog box appears.

The Port Software Configuration dialog box consists of two parts. The upper part is common to all types of cards.

The information presented in the second part of the Port Software Configuration dialog box depends on the type of port selected. The following pages include dialog boxes and explanations of the different software configurations for the cards.

DCL.3, DCL.3-ETH, DCL.2, DCL.2-ETH Software Configuration

Note *DCL.3 cards are supported by Agent versions ≥7.00.
DCL.2 cards are supported by Agent versions <7.00.*

- **To display software configuration of a DCL external port:**
 1. Select a port. Port 1 (SP-Supervisory Port) has different parameters from Port 2 (NP-Dial-out Port).
 2. From the **Configuration** menu, select **Port Info** or click the **Port Info** button .

The Port Information dialog box appears ([Figure 3-25](#)).

3. Click on the **SW Cfg>** tab.

A.1] 192.168.200.25: Port Information

Slot:

Port:

Card Type:

SW Cfg

Usage:

Routing Protocol:

Rate(bps):

Data Bits:

Parity:

Interface:

CTS:

DCD Delay(msec):

DSR:

Figure 3-25. DCL 2 SP Port Software Configuration

Table 3-21. DCL Port 1 (SP) Software Configuration Parameters

Parameter	Possible Values / Remarks
Usage	Function of the selected port NMS Slip , NMS PPP , Terminal , Agent Slip and Agent PPP
Routing Protocol	Protocol used for routing information from this port Proprietary , RIP2 , None
Rate (bps)	Operational speed, in bps, of the selected port. Auto indicates that the speed rate is selected by the DXC Auto , 300 , 1200 , 2400 , 4800 , 9600 , 19200 , 38400 , 57600
Data Bits	Number of data bits in the word format transmitted through the selected port 7 , 8
Parity	Parity mode used by the selected port None , Odd , Even .
Interface	The interface type DCE , DTE
CTS (msec)	State of the CTS (Clear to Send) line in the selected port On - CTS is always on =RTS - CTS line follows the local RTS line
DCD Delay (msec)	Time delay between Data Carrier Detection (DCD) and the sending of the data 0 , 10 , 50 , 100 , 200 and 300 .
DSR	State of the DSR line On - DSR line is continuously on =DTR - DSR line tracks the DTR line

A.1] 192.168.200.25: Port Information

Slot:

Port:

Card Type:

SW Cfg

Usage:

Routing Protocol:

Rate(bps):

Data Bits:

Parity:

Interface:

Call Out Mode:

Dial Retries:

Wait for Connect(sec):

Dial Mode:

Alternate No. Use:

Primary Dial No.:

Alternate Dial No.:

Figure 3-26. DCL 2 NP Port Software Configuration

Table 3-22 . DCL Port 2 (NP) Software Configuration Parameters

Parameter	Possible Values / Remarks
Usage	Function of the selected port Dial-Out, <u>NMS Slip</u>, NMS PPP, Agent Slip, Agent PPP
Routing Protocol	Protocol used for routing information from this port NA, Proprietary, RIP2, <u>None</u>
Rate	Operational speed, in bps, of the selected port 300, 1200, 2400, 4800, <u>9600</u>, 19200, 38400, 57600
Data Bits	Number of data bits in the word format transmitted through the selected port 7, <u>8</u>
Parity	Parity mode used by the selected port <u>None</u>, Odd, Even.
The following parameter are available for the DCL.2 card only when Usage=Dial Out	
Interface	The interface type <u>DCE</u>, DTE

Call Out Mode	Indicates when the DXC will initiate a call None - Call-out is disabled All - DXC initiates a call after each new alarm Major - DXC initiates a call when a new major alarm occurs
Dial Retries	Maximum number of retries to initiate a call 0 through 8
Wait for Connect (sec)	Time required, in seconds, for connection when the DXC initiates a call 30, 45, 60
Dial Mode	Type of dialing: Tone, Pulse
Alternate No. Use	Indicates if Alternate No. is to be used: Yes, No
Primary Dial No.	Number that the DXC dials when it initiates a calls
Alternate Dial No.	Alternate number that the DXC dials if attempts to dial the Primary Dial Number are unsuccessful

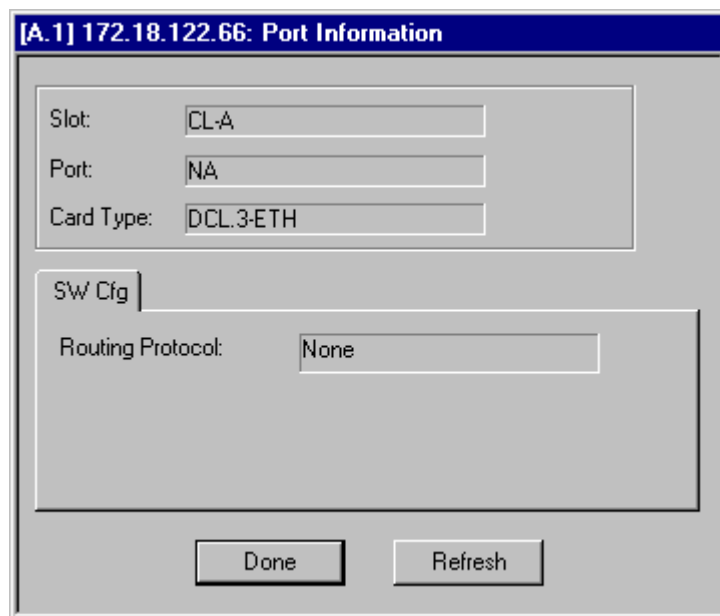


Figure 3-27. DCL ETH Port Information Dialog Box

Table 3-23. DCL-ETH Port Information Parameters

Parameter	Possible Values	Remarks
Routing Protocol	Proprietary, RIP2 and None.	Protocol used for routing information from this port.

DE1-DSU, DE1-LTU, DE1/F Software Configuration

➤ To view software configuration of a DE1 external port:

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-28](#)).

2. Click on the **SW Cfg>** tab.

The screenshot shows a dialog box titled "[A.1] 192.168.200.27: Port Information". It contains several input fields for configuration. The "Slot" field is set to "IO-10" and the "Port" field is set to "external-1". The "Card Type" field is set to "DE1-DSU". Below these fields is a tabbed interface with four tabs: "Info", "SW Cfg>" (which is selected), "<SW Cfg", and "Rdn Data". The "SW Cfg>" tab contains the following fields: "Line Type" set to "E1", "Line Code" set to "HDB3", "Loopback Config" set to "No Loop", "Signal Mode" set to "Bit Oriented", "Tx Clock Source" set to "Local Timing", "Sync" set to "CCITT", and "Link Mode" set to "Regular". At the bottom of the dialog box are two buttons: "Done" and "Refresh".

Slot:	IO-10
Port:	external-1
Card Type:	DE1-DSU
Info SW Cfg> <SW Cfg Rdn Data	
Line Type:	E1
Line Code:	HDB3
Loopback Config:	No Loop
Signal Mode:	Bit Oriented
Tx Clock Source:	Local Timing
Sync:	CCITT
Link Mode:	Regular
Done Refresh	

Figure 3-28. DE1 Port SW CFG> Tab

Table 3-24. DE1 SW Cfg> Tab Parameters

Parameter	Possible Values / Remarks
Line Type	Type of E1 line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry E1 - CCITT Rec. G.704 - Table 4a E1-CRC - CCITT Rec. G.704 - Table 4b E1-MF - CCITT Rec. G.704 - Table 4a, with TS16 multiframing enabled E1-CRC-MF - CCITT Rec. G.704 - Table 4b, with TS16 multiframing enabled Unframed - for use when the data being transmitted is unframed
Line Code	Line coding method used for zero suppression. This parameter is read-only HDB3 - High-Density Bipolar 3 coding. Zero strings are restricted to a maximum length of three pulse intervals. Non-zero pulses and intentional bipolar violations are inserted in the data sequence to help the receiving end restore the data
Loopback Config	Loopback configuration of the selected port No Loop - Not in loopback state. Payload Loop - Received signal at this port is looped through the DXC. The signal is typically looped back for transmission after passing through the agent's framing function. Line Loop - Received signal at this port does not go through the agent (minimum penetration) but is looped back out. Other Loop - Any loopback on the selected port that is undefined by the port's configuration.
Signal Mode	Type of signaling transfer mode used by the selected card Bit Oriented .
Tx Clock Source	Source of the card's transmit clock Loop Timing - Recovered receive clock is the transmit clock. Local Timing - Local clock source is the transmit clock. Through Timing - Receive clock recovered from another port is used as the transmit clock of the selected port.
Sync	Reduces the time required for the E1 port to return to normal operation after local loss of synchronization TR-62411 - Complies with AT&T TR-62411 (after 10 seconds) CCITT - Complies with CCITT Rec. G.732 Fast - After 1 second
Inband Mng	Identifier of inband management over the link If this port is the Destination Port for a DIM card or is designated as the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR for Inband Mng Off, FDL or TS0, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR
Inband Mng Routing Protocol	Protocol used for routing information over the link When Inband Mng=Off, Inband Mng Routing Protocol=None Proprietary, RIP2, None
Dedicated TS	Indicates the dedicated time slot: NA, 1 to 31
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00-FF

Table 24. DE1 Software Configuration Parameters (Cont.)

Parameter	Possible Values / Remarks
Link Mode	The Link Mode Regular, Transparent
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None - Non-transparent mode. When one of the links is in out-of-service state, the time slots carry the appropriate out-of-service code (data/voice OOS) to the other end of the link Trans - When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state Full - Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state. If Line Type=E1 or E1-CRC then the OOS Signal = NA Forced Idle - Signaling bits A and B are busy when the link is in out-of-service state Forced Busy - Signaling bits A and B are idle when the link is in out-of-service state Busy Idle - Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends Idle Busy - Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)

➤ **To view the Redundancy Data:**

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 3-5](#). A message is displayed if no redundancy has been defined for this card.

DT1-CSU, DT1-DSU, DT1/F Software Configuration

➤ To view software configuration of a DT1 external port:

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-29](#)).

2. Click on the **SW Cfg>** tab.

The dialog box is titled "[A.1] 192.168.200.27: Port Information". It contains several input fields for configuration: Slot (ID-3), Port (external-1), Card Type (DT1-CSU), Line Type (ESF), Line Code (B8ZS), Loopback Config (No Loop), Signal Mode (Robbed Bit), Tx Clock Source (Local Timing), FDL (ANSI-T1-403), FDL Mode (User), Sync (TR-62411), and Link Mode (Regular). There are four tabs: Info, SW Cfg> (selected), <SW Cfg, and Rdn Data. At the bottom are "Done" and "Refresh" buttons.

Field	Value
Slot	ID-3
Port	external-1
Card Type	DT1-CSU
Line Type	ESF
Line Code	B8ZS
Loopback Config	No Loop
Signal Mode	Robbed Bit
Tx Clock Source	Local Timing
FDL	ANSI-T1-403
FDL Mode	User
Sync	TR-62411
Link Mode	Regular

Figure 3-29. DT1 Port Software Configuration

Table 3-25. DT1 Software Configuration Parameters

Parameter	Possible Values / Remarks
Line Type	Type of T1 line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry ESF (Extended Superframe DS1) - 24 frames per multiframe. D4 - (AT&T D4 format DS1) - 12 frames per multiframe. Unframed - for use when the data being transmitted is unframed
Line Code	Line coding method used for zero suppression B7 - B7ZS coding, Jammed Bit zero suppression. A pulse is forced in bit 8 of each 8-bit period of each channel. Therefore, only 7 bits per channel (1.344 Mbps) is available for data B8ZS - B8ZS coding. A specified pattern of normal bits and bipolar variations replaces a sequence of 8 zero bits. This option provides clear channel capability Trans - Transparent (AMI) coding. No zero suppression is present
Loopback Config	Loopback configuration of the selected port: No Loop - Not in loopback state Payload Loop - Received signal at this port is looped through the DXC. The signal is typically looped back for transmission after passing through the agent's framing function Line Loop - Received signal at this port does not go through the agent (minimum penetration) but is looped back out Other Loop - Any loopback on the selected port that is undefined by the port's configuration
Signal Mode	Type of signaling transfer mode used by the selected card: None, Robbed Bit
Tx Clock Source	Source of the card's transmit clock: Loop Timing - Recovered receive clock is the transmit clock. Local Timing - Local clock source is the transmit clock. Through Timing - Receive clock recovered from another port is used as the transmit clock of the selected port.
FDL	Facility Data Link, allowing supervisory data (such as alarms, error performance, etc.) to be sent through the T1 link. This parameter is only applicable for ESF lines ANSI-T1-403 - FDL exchange recommended by ANSI Trans FDL - FDL exchange enabled between the two T1 ports of the same DT1 card
FDL Mode	
Sync	Reduces the time required for the T1 port to return to normal operation after local loss of synchronization TR-62411 - Complies with AT&T TR-62411 (after 10 seconds) Fast - After 1 second

Table 25. DT1 Software Configuration Parameters (Cont.)

Parameter	Possible Values / Remarks
TX Gain Mask (dB)	The selected attenuation value brings your signal level closer to the expected repeater signal level on the cable. This parameter is only applicable for DT1-CSU cards 0, 7.5, 15, 22.5
Line Length (feet)	Length of the cable connecting the T1 port and the network entry point. This parameter affects the transmit signal mask required to meet DSX-1 requirements, as specified by AT&T CB-119, or operation requirements of FCC Rules Part 68A. This parameter is only applicable for DT1-DSU cards 0-133, 134-266, 267-399, 400-533, 534-655, FCC-68
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF
Link Mode	Indicates the Link Mode: Regular, Transparent
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None - Non-transparent mode. When one of the links is in out-of-service state, the time slots carry the appropriate out-of-service code (data/voice OOS) to the other end of the link. Trans - When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state. Full - Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change.
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state Forced Idle - Signaling bits A and B are idle when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also idle. Forced Busy - Signaling bits A and B are busy when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also busy. Busy Idle - Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are idle for 2.5 seconds before switching to busy state. Idle Busy - Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are busy for 2.5 seconds before switching to idle state.
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)

Table 25. DT1 Software Configuration Parameters (Cont.)

Parameter	Possible Values / Remarks
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Inband Mng	Identifier of inband management over the link Off, FDL or TS0, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR
Inband Mng Routing Protocol	Protocol used for routing information over the link Proprietary, RIP2, None
Dedicated TS	Indicates the dedicated time slot. The Fbit cannot be a dedicated TS 1 to 24, NA

➤ **To view the Redundancy Data:**

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 3-5](#). A message is displayed if no redundancy has been defined for this card.

DHS Software Configuration

➤ **To display software configuration of a DHS port:**

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-30](#)).

2. Click on the **SW Cfg>** tab.

Figure 3-30. DHS Port SW Configuration

Table 3-26. DHS Software Configuration Parameters

Parameter	Possible Values / Remarks
Rate (Kbps)	Data rate of the selected port, in the format “$nx56$(or 64)=data rate,” where n equals the number of active time slots (1..24 or 1..31) that are needed to carry the data stream connected to the selected port. 56 or 64 is the basic rate multiplier. 0x56=0 or 0x64=0 - Port is not connected. nx56 where $n=1..31$ (56..1736) nx64 where $n=1..31$ (64..1984)
Clock Mode	Clock signal mode of the selected port DCE - DXC operates as a DCE and provides transmit and receive clock signals to the DTE equipment connected to the selected port. DTE1 - DXC provides receive clock signals to the equipment connected to the selected port, and receives transmit clock signals from the connected equipment. DTE2 - DXC receives both transmit and receive clock signals from the equipment connected to the selected port. The DXC buffers and retimes the incoming data.
FIFO Size	Size of the FIFO data buffer on the selected port. This parameter is only applicable when Clock Mode = DTE2 Auto - Automatic FIFO size selection. 16 - FIFO size = ± 16 bits. 30 - FIFO size = ± 30 bits. 52 - FIFO size = ± 52 bits. 72 - FIFO size = ± 72 bits.
CTS	State of the (Clear to Send) line in the selected port On - is always on. =RTS - line follows the local RTS line.
RTS State	State of the RTS (Request-to-Send) line in the selected port Off, On

HDSL Software Configuration

E1 Cards

► To display the software configuration of an internal HDSL port:

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-31](#)).

2. Click on the **SW Cfg>** tab.

The image shows a dialog box titled "[A.1] 172.17.152.240: Port Information". It contains several input fields and tabs. The top section has fields for "Slot:" (10-3), "Port:" (internal-1), and "Card Type:" (DE1-HDSL). Below these are four tabs: "Info", "SW Cfg>", "<SW Cfg", and "Rdn Data". The "SW Cfg>" tab is selected. Under this tab, there are three input fields: "Line Type:" (E1), "Idle Code (hex):" (7e), and "Link Mode:" (Regular). At the bottom of the dialog are two buttons: "Done" and "Refresh".

Figure 3-31. HDSL E1 Port Software Configuration

Table 3-27. HDSL E1 Software Configuration Parameters

Parameter	Possible Values / Remarks
Line Type	Type of E1 line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry E1 - CCITT Rec. G.704 - Table 4a E1-MF - CCITT Rec. G.704 - Table 4a, with TS16 multiframing enabled Unframed - for use when the data being transmitted is unframed
Inband Mng	Identifier of inband management over the link Off, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR
Inband Mng Routing Protocol	Protocol used for routing information over the link. None, Proprietary, RIP2
Dedicated TS	Indicates the dedicated time slot 1..31
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF
Link Mode	Indicates the Link Mode: Regular, Transparent
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None - Non-transparent mode. When one of the links is in out-of-service state, the time slots carry the appropriate out-of-service code (data/voice OOS) to the other end of the link. Trans -- When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state. Full - Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change.
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state NA Forced Idle - Signaling bits A and B are idle when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also idle. Forced Busy - Signaling bits A and B are busy when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also busy. Busy Idle -- Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are idle for 2.5 seconds before switching to busy state. Idle Busy -- Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are busy for 2.5 seconds before switching to idle state.
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)

➤ **To view the Redundancy Data:**

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 3-5](#). A message is displayed if no redundancy has been defined for this card.

T1 Cards

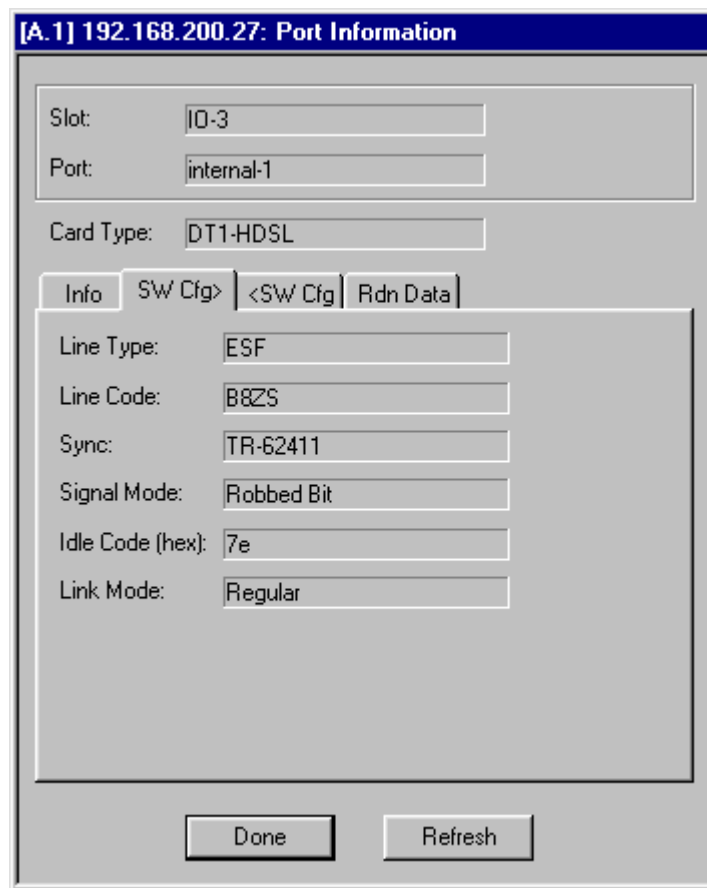
➤ **To display the software configuration of an HDSL port:**

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-32](#)).

2. Click on the **SW Cfg>** tab.

The image shows a 'Port Information' dialog box for slot [A.1] 192.168.200.27. It contains fields for Slot (10-3), Port (internal-1), and Card Type (DT1-HDSL). Below these are four tabs: Info, SW Cfg> (selected), <SW Cfg, and Rdn Data. The SW Cfg> tab displays configuration parameters: Line Type (ESF), Line Code (B8ZS), Sync (TR-62411), Signal Mode (Robbed Bit), Idle Code (hex) (7e), and Link Mode (Regular). At the bottom are 'Done' and 'Refresh' buttons.

[A.1] 192.168.200.27: Port Information	
Slot:	10-3
Port:	internal-1
Card Type:	DT1-HDSL
Info SW Cfg> <SW Cfg Rdn Data	
Line Type:	ESF
Line Code:	B8ZS
Sync:	TR-62411
Signal Mode:	Robbed Bit
Idle Code (hex):	7e
Link Mode:	Regular
Done Refresh	

Figure 3-32. HDSL T1 Port Software Configuration

Table 3-28. HDSL T1 Software Configuration Parameters

Parameter	Possible Values / Remarks
Line Type	Type of T3 line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry For T1 ports this parameter is read-only ESF (Extended Superframe DS1) -- 24 frames per multiframe. Unframed - for use when the data being transmitted is unframed
Line Code	Line coding method used for zero suppression This parameter is read-only B8ZS -- B8ZS coding. A specified pattern of normal bits and bipolar variations replaces a sequence of 8 zero bits. This option provides clear channel capability.
Signal Mode	Type of signaling transfer mode used by the selected card None, Robbed Bit
Sync	Reduces the time required for the T1 port to return to normal operation after local loss of synchronization TR--62411 -- Complies with AT&T TR--62411 (after 10 second) Fast -- After second
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF
Link Mode	Indicates the Link Mode If Link Mode=Transparent, Inbang Mng must be Off Regular, Transparent
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None - Non-transparent mode. When one of the links is in out-of-service state, the time slots carry the appropriate out-of-service code (data/voice OOS) to the other end of the link Trans -- When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state Full -- Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change.

Table 28. HDSL T1 Software Configuration Parameters (Cont.)

Parameter	Possible Values / Remarks
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state Forced Idle -- Signaling bits A and B are idle when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also idle Forced Busy -- Signaling bits A and B are busy when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also busy Busy Idle -- Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are idle for 2.5 seconds before switching to busy state Idle Busy -- Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are busy for 2.5 seconds before switching to idle state
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Inband Mng	Identifier of inband management over the link Off, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR If this port is the Destination Port for a DIM card or is designated as the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR for Inband Mng If Link Mode=Transparent, Inband Mng must be Off
Inband Mng Routing Protocol	Protocol used for routing information over the link None, Proprietary, RIP2 Proprietary and RIP2 are available only when Inband Mng is not Off
Dedicated TS	Indicates the dedicated TS NA, 1..24 TS 25 (Fbit) cannot be a Dedicated TS Dedicated TS depends on Frame Type of External port

➤ **To view the Redundancy Data:**

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 3-5](#). A message is displayed if no redundancy has been defined for this card.

DIM Software Configuration

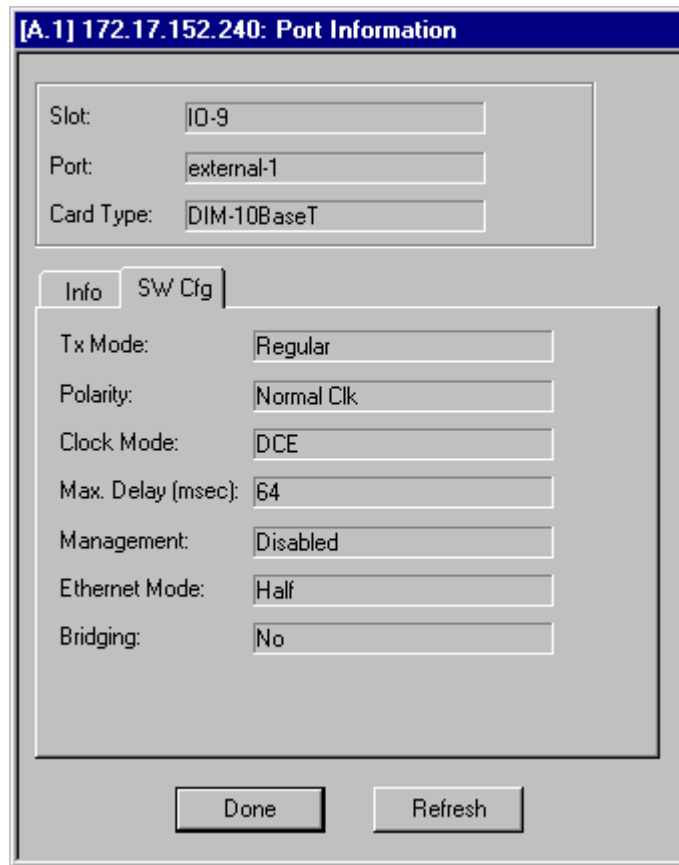
➤ **To display the software configuration of an external DIM port:**

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-33](#)).

2. Click on the **SW Cfg** tab.

The image shows a 'Port Information' dialog box with a title bar '[A.1] 172.17.152.240: Port Information'. It has two tabs: 'Info' and 'SW Cfg'. The 'Info' tab is active, showing fields for Slot (10-9), Port (external-1), and Card Type (DIM-10BaseT). The 'SW Cfg' tab is also visible, showing fields for Tx Mode (Regular), Polarity (Normal Clk), Clock Mode (DCE), Max. Delay (msec) (64), Management (Disabled), Ethernet Mode (Half), and Bridging (No). At the bottom are 'Done' and 'Refresh' buttons.

[A.1] 172.17.152.240: Port Information	
Slot:	10-9
Port:	external-1
Card Type:	DIM-10BaseT
Info SW Cfg	
Tx Mode:	Regular
Polarity:	Normal Clk
Clock Mode:	DCE
Max. Delay (msec):	64
Management:	Disabled
Ethernet Mode:	Half
Bridging:	No
Done Refresh	

Figure 3-33. DIM Port Software Configuration

Table 3-29. DIM Software Configuration Tab Parameters

Parameter	Possible Values / Remarks
Tx Mode	<u>Regular</u> , Broadcast
Polarity	<u>Normal Clk</u> , Inverted
Clock Mode	Clock signal mode of the selected port Ext-DCE, DCE, Smooth, Ext-Smooth
Max Delay (msec)	16 , <u>64</u>
Management	<u>Disabled</u> , Enabled
The following fields exist only for DIM-10BaseT cards.	
Ethernet Mode	Full , <u>Half</u>
Bridging	Yes , <u>No</u>

DT3, DT3/F, G747 Software Configuration

Note

The DT3/G747 has one external T3 port and 21 internal E1 ports.

➤ To configure the software configuration for a DE3, DE3/F internal port:

1. Select an internal port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



2. Click on the **SW Cfg>** tab.

The Port Information dialog box appears ([Figure 3-34](#)).

The dialog box is titled "[A.1] 172.18.122.69: Port Information". It contains the following fields and options:

- Slot: 10-8
- Port: internal-1 (dropdown menu)
- Card Type: DT3
- SW Cfg | Rdn Data (tabs)
- Line Type: ESF
- Line Code: B8ZS
- Sync: TR-62411
- Idle Code (hex): 7e
- Link Mode: Regular
- CGA: Trans
- Inband Mng: Off
- Inband Mng Routing Protocol: None
- Dedicated TS: NA
- Done button

Figure 3-34. DT3, DT3/F, G747 Software Configuration Dialog Box

Table 3-30. Internal Ports-DT3, DT3/F, G747 Software Configuration Parameters

Parameter	Possible Values / Remarks
Line Type	Type of line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry ESF (Extended Superframe DS1) -- 24 frames per multiframe. (Only for T3 lines) D4 -- (AT&T D4 format DS1) -- 12 frames per multiframe. (Only for T3 lines). Unframed - for use when the data being transmitted is unframed
Line Code	Line coding method used for zero suppression. Only for T3 lines. B7 - B7ZS coding, Jammed Bit zero suppression. A pulse is forced in bit 8 of each 8-bit period of each channel. Therefore, only 7 bits per channel (1.344 Mbps) is available for data. B8ZS -- B8ZS coding. A specified pattern of normal bits and bipolar variations replaces a sequence of 8 zero bits. This option provides clear channel capability. Trans - Transparent (AMI) coding. No zero suppression is present.
Sync	Reduces the time required for the port to return to normal operation after local loss of synchronization TR-62411 - Complies with AT&T TR--62411 (after 10 second). Fast - After second CCITT - Complies with CCITT Rec. G.732. (only for E3 internal ports)

Table 30. Internal Ports-DE3, DE3/F Software Configuration Parameters (Cont.)

Parameter	Possible Values / Remarks
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link Trans - When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state. Full - Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change.
Inband Mng	Identifier of inband management over the link For Internal ports: Off, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR If Link Type=Transparent, Inband Mng must be Off Proprietary and RIP2 are available only when Inband Mng is not Off
Dedicated TS	Indicates the dedicated TS NA, 1..24, 1..31
Inband Mng Routing Protocol	Protocol used for routing information over the link None, Proprietary, RIP2
Link Mode	Indicates the Link Mode Regular, Transparent

The dialog box is titled "[A.1] 172.18.122.69: Port Information". It contains the following fields and tabs:

- Slot:** 10-8
- Port:** external-1
- Card Type:** DT3
- Tabs:** Info (selected), SW Cfg, Rdn Data
- Line Length:** 0-450
- Frame Type:** M-13
- Tx Clock Source:** Internal
- Buttons:** Done, Refresh

Figure 3-35. DT3, DT3/F, G747 Software Configuration Dialog Box

► **To configure the software configuration for a DT3, DT3/F, G747 external port:**

1. Select an external port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



2. Click on the **SW Cfg** tab.

The Port Information dialog box appears.

Table 3-31. External Ports- DT3, DT3/F, G747 Software Configuration Parameters

Parameter	Possible Values / Remarks
Line Length (feet)	<u>0-450</u> , 451-900
Frame Type	<u>M-13</u> , C-bit-Tx, C-bit-Tx-Mng, C-bit-Rx, C-bit-Rx-Mng
Tx Clock Source	External, <u>Internal</u>

► **To view the Redundancy Data:**

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 3-5](#). A message is displayed if no redundancy has been defined for this card.

DE3, DE3/F Software Configuration

➤ **To display the software configuration of a DE3, DE3/F internal port:**

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-36](#)).

2. Click on the **SW Cfg** tab.

[A.1] 172.17.152.240: Port Information

Slot: 10-1
Port: internal-1
Card Type: DE3

SW Cfg | Rdn Data

Line Type: E1
Line Code:
Sync: CCITT
Idle Code (hex): 7e
Link Mode: Regular
CGA: Trans
Inband Mng: Off
Inband Mng Routing Protocol: None
Dedicated TS: NA

Done

Figure 3-36. DE3 Port Software Configuration (Internal Port)

Table 3-32. Internal Ports - DE3, DE3/F Software Configuration Parameters

Parameter	Possible Values / Remarks
Line Type	Type of line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry E3 Lines: E1 - CCITT Rec. G.704 - Table 4a E1-CRC - CCITT Rec. G.704 - Table 4b E1-MF - CCITT Rec. G.704 - Table 4a, with TS16 multiframing enabled. E1-CRC-MF - CCITT Rec. G.704 - Table 4b, with TS16 multiframing enabled. Unframed - for use when the data being transmitted is unframed
Line Code	Line coding method used for zero suppression Only for T3 lines B7 - B7ZS coding, Jammed Bit zero suppression. A pulse is forced in bit 8 of each 8-bit period of each channel. Therefore, only 7 bits per channel (1.344 Mbps) is available for data. B8ZS -- B8ZS coding. A specified pattern of normal bits and bipolar variations replaces a sequence of 8 zero bits. This option provides clear channel capability. Trans - Transparent (AMI) coding. No zero suppression is present.
Sync	Reduces the time required for the port to return to normal operation after local loss of synchronization TR-62411 - Complies with AT&T TR--62411 (after 10 second). Fast - After second. CCITT - Complies with CCITT Rec. G.732. (only for E3 internal ports)
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None - Non-transparent mode. When one of the links is in out-of-service state, the time slots carry the appropriate out-of-service code (data/voice OOS) to the other end of the link Trans - When one of the links is in out--of--service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state Full - Fully transparent mode. When one of the links is in out--of--service state, the state of the time slots and the state of the signaling bits does not change.
Inband Mng	Identifier of inband management over the link For Internal ports: Off, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR
Dedicated TS	Indicates the dedicated TS: NA, 1..31
Inband Mng Routing Protocol	Protocol used for routing information over the link None, Proprietary, RIP2
Link Mode	Indicates the Link Mode: Regular, Transparent

➤ **To display the software configuration of a DE3, DE3/F external port:**

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-37](#)).

2. Click on the **SW Cfg** tab.

Figure 3-37. DE3 Port Software Configuration (Internal Port)

Table 3-33. DE3, DE3/F External Port Software Configuration Parameters

Parameter	Possible Values / Remarks
Line Length (feet)	<u>0-450</u> , 451-900
Frame Type	Identifier of inband management over the link <u>M-13</u> , C-bit-Tx-Rx, C-bit-Tx-Rx-Mng, C-bit-Tx, C-bit-Tx-Mng

➤ **To view the Redundancy Data:**

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 3-5](#). A message is displayed if no redundancy has been defined for this card.

D4T1, D8T1 Software Configuration

➤ **To display the software configuration for a D4T1, D8T1 external port:**

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-38](#)).

2. Click on the **SW Cfg** tab.

[A.1] 172.18.122.69: Port Information

Slot:

Port:

Card Type:

Info | **SW Cfg** | <SW Cfg | Rdn Data

Line Mode:

Line Type:

Line Code:

Signal Mode:

Rx Gain:

Sync:

Link Mode:

Done Refresh

Figure 3-38. External Port D4T1, D8T1 Software Configuration Dialog Box

Table 3-34. D4T1, D8T1 External Port Configuration Parameters

Parameter	Possible Values / Remarks
Line Mode	<u>DSU</u> , CSU
Line Type	Type of line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry <u>ESF</u> (Extended Superframe DS1) - 24 frames per multiframe. (Only for T1 lines) D4 - (AT&T D4 format DS1) - 12 frames per multiframe. (Only for T1 lines). Unframed - for use when the data being transmitted is unframed
Line Code	Line coding method used for zero suppression B7 - B7ZS coding, Jammed Bit zero suppression. A pulse is forced in bit 8 of each 8-bit period of each channel. Therefore, only 7 bits per channel (1.344 Mbps) is available for data. <u>B8ZS</u> - B8ZS coding. A specified pattern of normal bits and bipolar variations replaces a sequence of 8 zero bits. This option provides clear channel capability. Trans - Transparent (AMI) coding. No zero suppression is present.
Signal Mode	Type of signaling transfer mode used by the selected card None , <u>Robbed Bit</u>
Rx Gain	Long Haul , <u>Short Haul</u>
Sync	Reduces the time required for the port to return to normal operation after local loss of synchronization TR-62411 - Complies with AT&T TR-62411 (after 10 second). Fast - After second.
Tx Gain Mask (dB)	<u>0</u> , 7.5 , 15.0 , 22.5 Only enabled when Line Mode=CSU
Line Length (feet)	<u>0-133</u> , 134-266 , 267-399 , 400-533 , 534-655 , FCC-68 Only enabled when Line Mode=DSU
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF
Link Mode	Indicates the Link Mode Regular , Transparent If Link Mode=Transparent, Inbang Mng must be Off
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None Trans - When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state. Full - Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change.

Table 34. D4T1, D8T1 External Port Configuration Parameters (Cont.)

Parameter	Possible Values / Remarks
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state Forced Idle - Signaling bits A and B are idle when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also idle. Forced Busy - Signaling bits A and B are busy when the link is in out-of-service state. In addition, if the line type is ESF, signaling bits C and D are also busy. Busy Idle - Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are idle for 2.5 seconds before switching to busy state. Idle Busy - Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends. In addition, if the line type is ESF, signaling bits C and D are busy for 2.5 seconds before switching to idle state
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Inband Mng	Identifier of inband management over the link Off, FDL or TSO, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR If this port is the Destination Port for a DIM card or is designated as the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR for Inband Mng. If Link Mode=Transparent, Inband Mng must be Off
Inband Mng Routing Protocol	Protocol used for routing information over the link. Proprietary and RIP2 are available only when Inband Mng is not Off None, Proprietary, RIP2
Dedicated TS	Indicates the dedicated TS NA, 1..24 TS 25 (Fbit) cannot be a Dedicated TS Dedicated TS depends on Frame Type of External port

➤ **To view the Redundancy Data:**

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 3-5](#). A message is displayed if no redundancy has been defined for this card.

➤ **To display the software configuration for a D4T1, D8T1 internal port:**

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-39](#)).

2. Click on the **SW Cfg** tab.

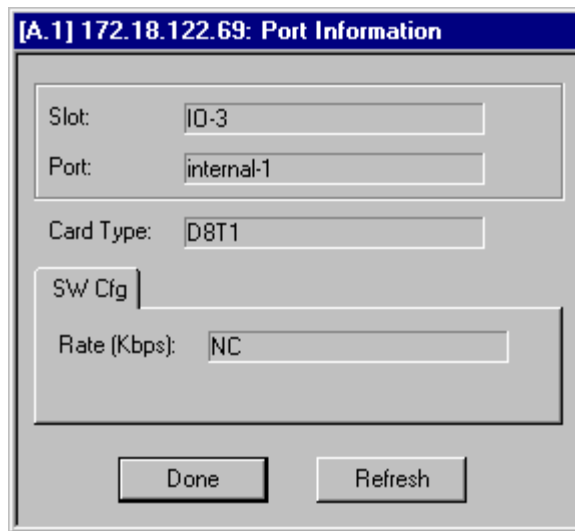


Figure 3-39. Internal Port D4T1, D8T1 Software Configuration Dialog Box

Table 3-35. D4T1, D8T1 Internal Port Configuration Parameters

Parameter	Possible Values / Remarks
Rate	<u>NC</u> , 64 Kbps

D4E1, D8E1 Software Configuration

➤ **To display the software configuration for a D4E1, D8E1 external port:**

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-40](#)).

2. Click on the **SW Cfg** tab.

[A.1] 172.18.122.69: Port Information

Slot:

Port:

Card Type:

Info SW Cfg <SW Cfg Rdn Data

Line Type:

Sync:

Inband Mng:

Inband Mng Routing Prot:

Dedicated TS:

Idle Code (hex):

Link Mode:

CGA:

Done Refresh

Figure 3-40. External Port D4E1, D8E1 Software Configuration Dialog Box

Table 3-36. D4E1, D8E1 External Port Configuration Parameters

Parameter	Possible Values
Line Type	Type of line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry E1 - CCITT Rec. G.704 - Table 4a E1-CRC - CCITT Rec. G.704 - Table 4b E1-MF - CCITT Rec. G.704 - Table 4a, with TS16 multiframing enabled E1-CRC-MF - CCITT Rec. G.704 - Table 4b, with TS16 multiframing enabled Unframed - for use when the data being transmitted is unframed
Sync	Reduces the time required for the port to return to normal operation after local loss of synchronization TR-62411 - Complies with AT&T TR-62411 (after 10 second) CCITT - Complies with CCITT Rec. G.732 Fast - After second
Inband Mng	Identifier of inband management over the link If this port is the Destination Port for a DIM card or is designated as the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR for Inband Mng. If Link Mode=Transparent, Inband Mng must be Off Off, FDL or TSO, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR
Inband Mng Routing Protocol	Protocol used for routing information over the link None, Proprietary, RIP2 Proprietary and RIP2 are available only when Inband Mng is not Off
Dedicated TS	Indicates the dedicated TS NA, 1..31 Dedicated TS depends on Frame Type of External port
Idle Code (hex)	00 - FF Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box
Link Mode	Indicates the Link Mode Regular, Transparent If Link Mode=Transparent, Inband Mng must be Off
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None Trans - When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state. Full - Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change.
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state. If Line Type=E1 or E1-CRC then the OOS Signal = NA Forced Idle - Signaling bits A and B are busy when the link is in out-of-service state Forced Busy - Signaling bits A and B are idle when the link is in out-of-service state Busy Idle - Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends Idle Busy - Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends

Table 36. D4E1, D8E1 External Port Configuration Parameters (Cont.)

Parameter	Possible Values
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00-FF (hexadecimal)
Rx Gain	Long Haul, Short Haul, Monitor 12dB, Monitor 30dB The following fields are enabled when Link Mode≠Transparent
SA Bit 4	1 (0001)
SA Bit 5	0 (0000)
SA Bit 6	Management (0010, available only when Inband Mng ≠FDL or TSO)
SA Bit 7	Transparent (0011)
SA Bit 8	When set is performed, sme value will be enforced on the external port's pair: external-1 & external-2, external-3 & external-4, external-5 & external-6, external-7 & external-8)

➤ **To view the Redundancy Data:**

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Redundancy Data...**

Redundancy Data window appears. The Redundancy Data Parameters are listed in [Table 3-5](#). A message is displayed if no redundancy has been defined for this card.

➤ **To display the software configuration for a D4E1, D8E1 internal port:**

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-41](#)).

2. Click on the **SW Cfg** tab.

Figure 3-41. Internal Port D4E1, D8E1 Software Configuration Dialog Box

Table 3-37. DET1, DET1 Internal Port Configuration Parameters

Parameter	Possible Values / Remarks
Rate	<u>NC</u> , 64 Kbps

D8U, D16U Software Configuration

► To display the software configuration for a D8U, D16U external port:

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button .

The Port Information dialog box appears ([Figure 3-42](#)).

Figure 3-42. External Port D8U, D16U Software Configuration Dialog Box

2. Click on the External tab.

Table 3-38. D8U, D16U External Port Configuration Parameters

Parameter	Possible Values / Remarks
Interface	Selects the operating mode of the corresponding port. NT-I, LT-I, LT-1 To operate a port in a link with an ASM-31/ASMi-31, you must select LT-1
Activation Type	Selects the activation mode of the port. 1..3, NA
LT-1	
LLB Enable	Controls the activation of a local loopback (loopback type 3 per ITU-T Rec. V.54) through the LLB pin in the user's port interface of the ASMi-31 connected to the corresponding D8U/D16U port: Enabled (checked) Loopback activation enabled Disabled (unchecked) Loopback activation disabled
RLB Enable	Controls the activation of a remote loopback (loopback type 2 per ITU-T Rec. V.54) through the RLB pin in the user's port interface of the ASMi-31 connected to the corresponding D8U/D16U port: Enabled (checked) Loopback activation enabled Disabled (unchecked) Loopback activation disabled
Clock Mode	Selects the timing mode of the ASMi-31 connected to the corresponding port: DCE The ASMi-31 unit provides transmit and receive clock signals, derived from the line signal received from the corresponding port, to the user's equipment connected to its user's port. EXT-DCE The ASMi-31 unit provides the receive clock signal (derived from the line signal received from the corresponding port) to the user's equipment connected to its user's port, and accepts the transmit clock from the user's equipment. The user's equipment must be configured to operate with loopback timing.
B Channels	
Rate	Controls the connection of the B1 channel of the corresponding port to a selected time slot of one of the DXC links: NC The port is not connected 64 kbps The port is connected, and is configured to carry a payload of 64 kbps (this requires the use of a single B channel, and the allocation of one time slot to this port) 128 kbps The port is connected, and is configured to carry a payload of 128 kbps (this requires the use of both B channels, and the allocation of two time slots to this port)

Table 38. D8U, D16U External Port Configuration Parameters (Cont.)

Parameter	Possible Values / Remarks
D Channels	
Connect	Determines whether the corresponding port is connected to the main link: Yes (Port is connected), No (Port is disconnected) You can still program the desired parameters, so the port will be ready to operate when needed
Concentrated To	None, Internal-1.. Internal-4

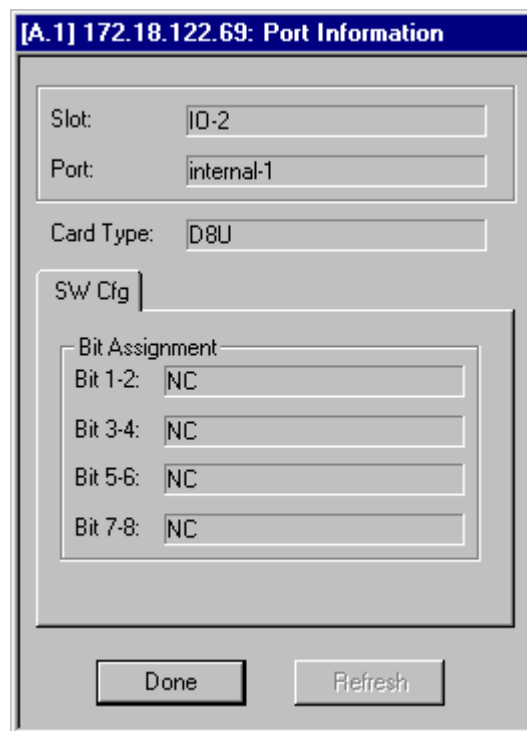


Figure 3-43. Internal Port D8U, D16U Software Configuration Dialog Box

Table 3-39. D8U, D16U Internal Port Configuration Parameters

Parameter	Possible Values / Remarks
Bit 1-2	B is the desired internal port number (1 or 2 for D8U, and 1, 2, 3 or 4 for D16U) NC, external-1/D.. external-n/D where n=8 (D8U card), n=16 (D16U card)
Bit 3-4	NC, external-1/D.. external-n/D where n=8 (D8U card), n=16 (D16U card)
Bit 5-6	NC, external-1/D.. external-n/D where n=8 (D8U card), n=16 (D16U card)
Bit 7-8	NC, external-1/D.. external-n/D where n=8 (D8U card), n=16 (D16U card)

DSTM-1(FRAC.), DSTM-1/R(FRAC.) Software Configuration

- To display the software configuration for a DSTM-1(FRAC.), DSTM-1/R(FRAC.) external port:

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears (Figure 3-44).

2. Click on the **SW Cfg>** tab.

Figure 3-44. External Port DSTM-1(FRAC.) Software Configuration Dialog Box

Table 3-40. DSTM-1(FRAC.), DSTM-1/R(FRAC.) External Port Configuration Parameters

Parameter	Possible Values / Remarks
Enable AIS upon Fail	Checked (enabled), Unchecked (disabled)
Enable RDI upon Fail	Checked (enabled), Unchecked (disabled)
SD Threshold (10E-)	Signal Degraded Threshold Units: [10E-] Threshold is 10E-x relative to the frequency of the data flow 5, 6, 7, 8, 9

EED Threshold (10E-)	Excessive Error Defect Threshold Units: [10E-] Threshold is 10E-x relative to the frequency of the data flow 3, 4, 5
Clock Mode	Clock Source of the STM-1 port LBT , Internal

► **To display the software configuration for a DSTM-1(FRAC.), DSTM-1/R(FRAC.) internal port:**

1. Select the desired port and from the **Configuration** menu, select **Port Info** or click the **Port Info** button



The Port Information dialog box appears ([Figure 3-45](#)).

2. Click on the **SW Cfg** tab.

[A.1] 172.18.122.66: Port Information

Slot: 10-11
Port: internal-133
Card Type: DSTM1(FRAC.)

Info | **SW Cfg**

Upon EED: ☒
 Upon SLM: ☒
 Upon Path Trace: ☒
 SD Threshold: 6
 EED Threshold: 3
 J1 Tx Path Trace Enable: ☐
 J1 Rx Path Trace Enable: ☐
 J1 Path Trace:

Done Refresh

Figure 3-45. Internal-133 Port (VC4) Software Configuration Dialog Box

Table 3-41. DSTM-1(FRAC.), DSTM-1/R(FRAC.) Internal Port-133 (VC4) Parameters

Parameter	Possible Values / Remarks
Enable AIS and RDI	
Upon EED	Enables/Disables AIS and RDI signal when Excessive Error Defect is detected Checked (enabled), Unchecked (disabled)
Upon SLM	Enables/Disables AIS and RDI signal when Signal Label Mismatch is detected Checked (enabled), Unchecked (disabled)
Upon Path Trace	Checked (enabled), Unchecked (disabled)
SD Threshold (10E-)	Signal Degraded Threshold Units: [10E-] Threshold is 10E-x relative to the frequency of the data flow 5, 6, 7, 8, 9
EED Threshold (10E-)	Excessive Error Defect Threshold Units: [10E-] Threshold is 10E-x relative to the frequency of the data flow 3, 4, 5
J1 Rx Path Trace Enable	Enables/Disables checking J1 Rx Path Trace Checked (enabled), Unchecked (disabled)
J1 Tx Path Trace Enable	Enables/Disables checking J1 Tx Path Trace Checked (enabled), Unchecked (disabled)
J1 Path Trace	Maximum 16 Characters Enabled only if J1 Tx/Rx Path Trace=Enable

[A.1] 172.18.122.66: Port Information

Slot: ID-11

Port: internal-64

Card Type: DSTM1(FRAC.)

Info SW Cfg

Upon EED: ☒

Upon SLM: ☒

Upon Path Trace: ☒

J2 Tx Path Trace Enable: ☐

J2 Rx Path Trace Enable: ☐

J2 Path Trace:

Done Refresh

Figure 3-46. DSTM-1(FRAC.), DSTM-1/R(FRAC.) VC12 Ports Software Configuration

Table 3-42. DSTM-1(FRAC.), DSTM-1/R(FRAC.) Internal Port VC12 Parameters

Parameter	Possible Values / Remarks
Enable AIS and RDI	
Upon EED	Enables/Disables AIS and RDI signal when Excessive Error Defect is detected Checked (enabled), Unchecked (disabled)
Upon SLM	Enables/Disables AIS and RDI signal when Signal Label Mismatch is detected Checked (enabled), Unchecked (disabled)
Upon Path Trace	Checked (enabled), Unchecked (disabled)
J2 Rx Path Trace Enable	Enables/Disables checking J2 Rx Path Trace Checked (enabled), Unchecked (disabled)
J2 Tx Path Trace Enable	Enables/Disables checking J2 Tx Path Trace Checked (enabled), Unchecked (disabled)
J2 Path Trace	Maximum 16 Characters Enabled only if J2 Tx/Rx Path Trace=Enable

[A.1] 172.18.122.66: Port Information

Slot: ID-11

Port: internal-1

Card Type: DSTM1(FRAC.)

Info SW Cfg <SW Cfg

Line Type: E1

Sync: CCITT

Inband Mng: Off

Inband Mng Routing Prot: None

Dedicated TS: NA

Idle Code (hex): 7e

Link Mode: Regular

CGA: None

Done Refresh

Figure 3-47. DSTM-1(FRAC.), DSTM-1/R(FRAC.) Internal E1 Software Configuration

Table 3-43. DSTM-1(FRAC.), DSTM-1/R(FRAC.) Internal Port E1 Parameters

Parameter	Possible Values
Line Type	Type of line implementing the selected circuit. The type of circuit affects the number of frames that the circuit can carry E1 - CCITT Rec. G.704 - Table 4a E1-CRC - CCITT Rec. G.704 - Table 4b E1-MF - CCITT Rec. G.704 - Table 4a, with TS16 multiframing enabled E1-CRC-MF - CCITT Rec. G.704 - Table 4b, with TS16 multiframing enabled Unframed - for use when the data being transmitted is unframed
Sync	Reduces the time required for the port to return to normal operation after local loss of synchronization TR-62411 -- Complies with AT&T TR--62411 (after 10 second) CCITT - Complies with CCITT Rec. G.732 Fast - After second
Inband Mng	Identifier of inband management over the link If this port is the Destination Port for a DIM card or is designated as the Monitoring Port, do not select Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR for Inband Mng If Link Type=Unframed, Inband Mng must be Off Off, Dedicated TS, Dedicated TS/PPP, Dedicated TS/FR.
Inband Mng Routing Protocol	Protocol used for routing information over the link None, Proprietary, RIP2 Proprietary and RIP2 are available only when Inband Mng is not Off
Dedicated TS	Indicates the dedicated TS NA, 1..31 Dedicated TS depends on Line Type of port
Idle Code (hex)	Hexadecimal code transmitted to fill idle (unused) time slots in frames transmitted through the selected port. To change the code, type the required code in the edit box 00 - FF
Link Mode	Indicates the Link Mode Regular, Transparent If Link Type=Unframed, Link Mode=Transparent
CGA	Method used to signal the carrier group alarm (CGA) state to the other end of the selected link None Trans -- When one of the links is in out-of-service state, the time slots carry the appropriate OOS code to the other end of the link. Signaling bits A and B are not forced into the OOS state Full -- Fully transparent mode. When one of the links is in out-of-service state, the state of the time slots and the state of the signaling bits does not change
OOS Signal	State of the signaling bits when the link is in out-of-service (OOS) state. If Line Type=E1 or E1-CRC then the OOS Signal = NA Forced Idle - Signaling bits A and B are busy when the link is in out-of-service state Forced Busy - Signaling bits A and B are idle when the link is in out-of-service state Busy Idle - Signaling bits A and B are idle for 2.5 seconds, then become busy until the out-of-service state ends Idle Busy - Signaling bits A and B are busy for 2.5 seconds, then become idle until the out-of-service state ends
Voice OOS (hex)	Voice out-of-service code transmitted on voice time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00..FF (hexadecimal)
Data OOS (hex)	Data out-of-service code transmitted on data time slots when the link is out-of-service. This value must be the same for both ports. To change the code, type the required code in the edit box 00..FF (hexadecimal)

Far Modem Parameters

Far modem parameters can be displayed for external (shadowed) ports of D8U and D16U cards. The parameters displayed are read-only. The data is configured in the SW configuration of the external port in edit configuration mode.

➤ **To display Far Modem parameters:**

- Select an external port and from the **Configuration** menu, select **Far Modem Parameters...**

The Far Modem Parameters dialog box appears ([Figure 3-48](#)).

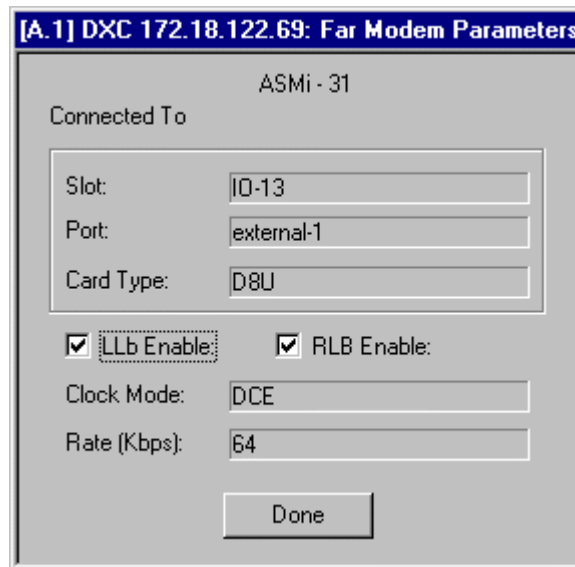


Figure 3-48. Far Modem Dialog Box

Table 3-44. Far Modem Parameters

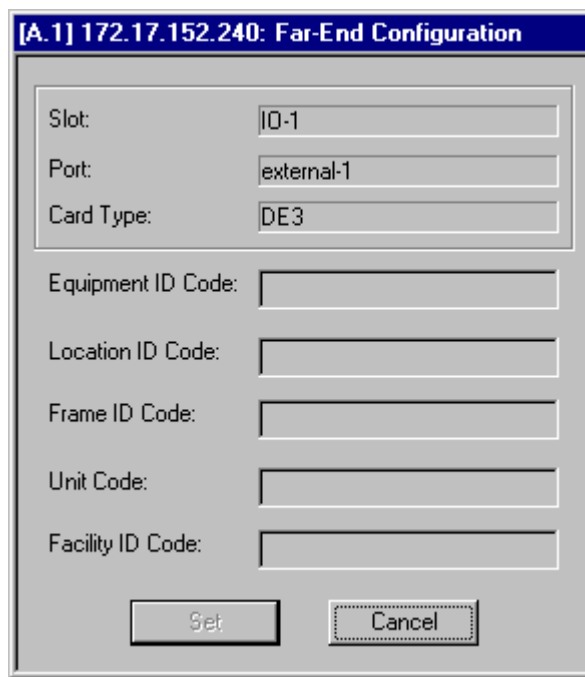
Parameter	Possible Values / Remarks
LLB Enable	Enabled (checked), Disabled
RLB Enable	Enabled (checked), Disabled
Clock Mode	DCE , EXT-DCE
Rate (Kbps)	NC , 64 , 128

Far-End Configuration

➤ **To configure Far-End parameters for DE3, DE3/F, DT3, DT3/F cards:**

- Select the desired port and from the **Configuration** menu, select **Port Info** followed by **Far-End Config...**

The Far-End Configuration dialog box appears ([Figure 3-49](#)).



The dialog box is titled "[A.1] 172.17.152.240: Far-End Configuration". It contains several input fields for configuration parameters. The first three fields are grouped together: "Slot" with the value "IO-1", "Port" with the value "external-1", and "Card Type" with the value "DE3". Below these are five more fields: "Equipment ID Code:", "Location ID Code:", "Frame ID Code:", "Unit Code:", and "Facility ID Code:", each followed by an empty text box. At the bottom of the dialog are two buttons: "Set" and "Cancel".

Figure 3-49. Far End Configuration Dialog Box

Table 3-45. Far-End Configuration Parameters

Parameter	Possible Values / Remarks
Slot	The current slot
Port	The current port
Card Type	The card type
Equipment ID Code	The ID code for the equipment Up to 10 characters
Location ID Code	The Location ID code Up to 11 characters
Frame ID Code	The ID code for the frame Up to 10 characters
Unit Code	The Unit Code Up to 6 characters
Facility ID Code	The Facility Code Up to 38 characters

Destination Ports Parameters

The Destination port parameters can be configured for DIM cards only.

► To display the destination ports of a DIM card:

- In the Card View, select the desired port and from the **Configuration** menu, select **Destination Ports...**

The Destination Port Information dialog box appears ([Figure 3-50](#)).

[A.1] 192.168.200.27: Destination Ports

Slot:

Port:

Card Type:

Index	Dest Slot	Dest Port	Connect
1	None	None	☒
2	None	None	☐
3	None	None	☐
4	None	None	☐
5	None	None	☐
6	None	None	☐
7	None	None	☐
8	None	None	☐

Figure 3-50. DIM Port Destination Ports

Table 3-46. DIM Ports Software Configuration Parameters

Parameter	Possible Values / Remarks
Index	The index number: 1..8
Dest Slot	The destination slot: None, IO-1..IO-15
Dest Port	The destination port: None, external-1..external-8, internal-1..internal-28
Connect	Yes, No

Monitoring Port Parameters

Monitoring Port parameters can be displayed for DHS, DT1/DE1 and the internal ports of the HDSL cards.

- In the Card View, select the desired port and from the **Configuration** menu, select **Monitoring Port...**

The Monitoring Port Parameters dialog box appears ([Figure 3-51](#)).

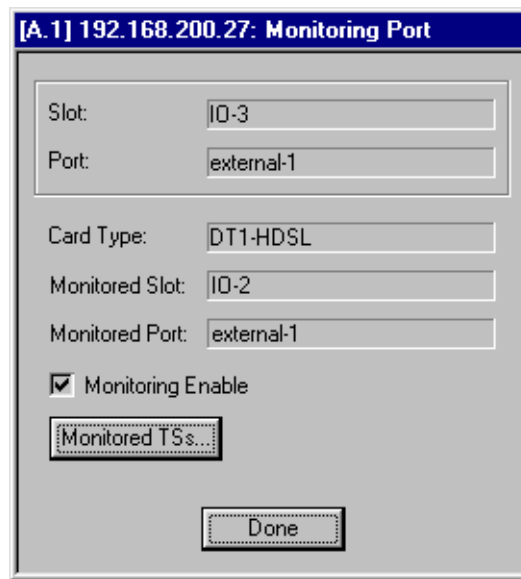


Figure 3-51. Monitoring Port Parameters Dialog Box

Table 3-47. Monitoring Port Parameters

Parameter	Possible Values / Remarks
Slot	The selected slot
Port	The selected port External-1, external-2
Card Type	Type of card: DT1, DE1
The following parameters are available only when Monitoring Enable is checked.	
Monitored Slot	The monitored slot: IO-1..IO-15
Monitored Port	The monitored port: External-1..external-2 or internal-1..internal-2

➤ **To view the monitored Time Slots:**

Note *Monitored TSs... - will be enabled only when Monitoring Enable is checked.*

- Click <**Monitored TS...**>

The Monitored TS window appears ([Figure 3-52](#)).

TS	Selection
1	☒
2	☐
3	☐
4	☐
5	☐
6	☐
7	☐
8	☐
9	☐
10	☐
11	☐
12	☐
13	☐

Figure 3-52. Monitored TS Table

TU Mapping

TU Mapping can be configured for STM internal-133 (VC4) and internal-134 (VC4) ports of the DSTM-1(FRAC.), DSTM-1/R(FRAC.) cards.

➤ **To configure/view TU Mapping parameters:**

- In the Card View, select the desired port and from the **Configuration** menu, select **TU Mapping...**

The Port TU Mapping Parameters dialog box appears ([Figure 3-53](#)).

[E.1] 172.18.122.66: Port TU Mapping

Slot:

Card Type:

Port:

TU12	TU Type	Conn.Port	TU Mode
1	NC	NA	NA
2	NC	NA	NA
3	NC	NA	NA
4	NC	NA	NA
5	NC	NA	NA
6	NC	NA	NA
7	NC	NA	NA
8	NC	NA	NA
9	NC	NA	NA
10	NC	NA	NA
11	NC	NA	NA
12	NC	NA	NA

Close Refresh

Figure 3-53. TU Mapping Dialog Box

Table 3-48. TU Mapping Parameters

Parameter	Possible Values / Remarks
TU12	Unique TU (Tributary Unit) within VC-4 1..63
TU Type	Type of TU (Tributary Unit)connected to one of the E1 ports NC, Connected
Conn. Port	Connected port NA, internal-1 (E1).. internal-30 (E1)
TU Mode	TU Mode of connection NA, Add and Drop
[Refresh]	Refreshes parameters

3.7 Port Fault Menu Operations

The Port View **Fault** menu contains options for displaying active alarms and failures in the selected port.

Displaying Port Alarms

The **Display** command displays a list of active alarms for the selected port.

➤ **To view all active alarms for the selected port:**

- From the **Fault** menu, select **Alarms** followed by **Display...**

The Port Active Alarm List appears ([Figure 3-54](#)).

No.	Code	Description	Severity	State	Mask/Invert	Counter
1	29	SIGNAL LOSS	major	on	None	1
2	111	STM CRITICAL ALARM	major	on	None	1

Figure 3-54. Port Active Alarm List

Table 3-49. Port Active Alarm List Parameters

Parameter	Possible Values / Remarks
Slot	Slot number of the card in which the alarm originated IO1 - IO15, CL-A and CL-B.
Port	Port number in which the alarm originated external-1..external-8, internal-1..internal-30
Card Type	Type of card assigned to the selected slot
No.	Index number of the alarm
Code	Code which indicates a certain alarm description
Description	Description of the alarm
Severity	State of the alarm: Minor, Major
Status	State: On, Off
Mask/Invert	Indicates the alarm status: Mask, Invert or None
Counter	Number of times this alarm occurred since system is running or last Clear

Displaying Port Failures

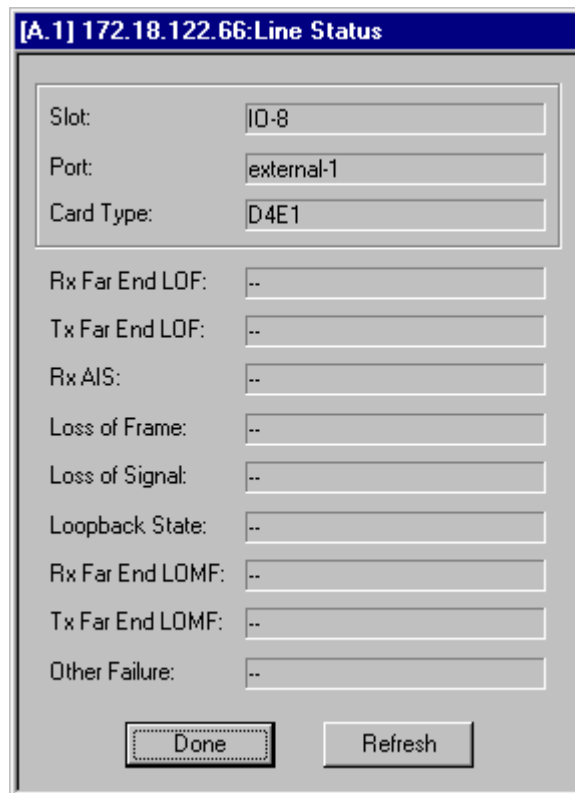
The **Failures>Line Status** command allows you to view failures, if any, in the selected port. This function is applicable only for:

- DT1, DE1 cards
- Internal ports of STM and HDSL cards
- External ports of DT3, DE3 cards.

➤ **To see a list of port failures:**

- From the **Fault** menu, select **Line Status...**

The Line Status dialog box appears ([Figure 3-55](#)).



The image shows a screenshot of the 'Line Status' dialog box. The title bar is blue and contains the text '[A.1] 172.18.122.66:Line Status'. The dialog box has a light gray background. At the top, there are three input fields: 'Slot:' with the value '10-8', 'Port:' with the value 'external-1', and 'Card Type:' with the value 'D4E1'. Below these are ten rows of status indicators, each with a label and a text box containing '--': 'Rx Far End LOF:', 'Tx Far End LOF:', 'Rx AIS:', 'Loss of Frame:', 'Loss of Signal:', 'Loopback State:', 'Rx Far End LOMF:', 'Tx Far End LOMF:', and 'Other Failure:'. At the bottom of the dialog box are two buttons: 'Done' and 'Refresh'.

Figure 3-55. Line Status Dialog Box

The Line Status dialog box lists all possible detectable port failures and the status of each failure. The possible failures depend on the type of card (DT1 or DE1).

- On indicates that a failure exists
- -- indicates that there is no failure

Table 3-50. Line Status Parameters

Parameter	Possible Values / Remarks
Rx/Tx Far End LOF	For T1/E1 cards only
Rx/Tx Far End LOMF	For E1 cards only
Rx RAI Failure	For T3/E3 ports only
Tx RAI	For T3/E3 ports only
Rx AIS	
Tx AIS	For T3/E3 ports only
Rx LOF	For T3/E3 ports only
Rx LOS	For T3/E3 ports only
Loss of Frame	For T1/E1 cards only
Loss of Signal	For T1/E1 cards only
Loopback State	
Rx Test Code	For T1 cards only
Other Failure	
Rcv Test Code	For T3 ports only
Unavailable Signal	For T3/E3 ports only
Net Equipment OOS	For T3/E3 ports only

Diagnostic Tests

The DXC supports local and remote loopback tests. For cards with T1 interfaces, network line and payload loopbacks are also supported. For detailed descriptions of these tests, see the *DXC-30/DXC-30E/DXC-10A/DXC-8R Operator's Manual*.

RADview-PC's Diagnostics function enables you to do the following:

- View the status of diagnostic tests in the selected port
- Start a diagnostic test
- Stop a currently running diagnostic test.

➤ **To enter the diagnostic test function:**

1. In the Agent Card view, click a port.
2. From the **Diagnostics** menu, select **Test...**

The Port Tests dialog box appears ([Figure 3-56](#)).

Test	Status	Command	Duration
Local	--	No Change	
Remote	--	No Change	
BERT	--	No Change	
BERT Counter	--		
Tx Inband	--	No Change	
Rx Inband	--	No Change	
Monitoring	--	No Change	
TS Remote Loop	--	No Change	

Figure 3-56. Sample Port Tests Dialog Box

The port identification at the top of the dialog box contains the following read-only parameters:

- Slot Slot number of the selected card. Possible values are **IO1** - **IO15**.
- Port Selected port. Possible values are external-1..external-28, internal-1..internal-2.
- Card Type Type of card assigned to the selected slot

- The **Test** group lists the possible tests for the selected port and the status of each test. The status can be **Active** or - (not active).
- The **BERT Counter** shows the number of bit errors detected during the BERT test.

The **Activate** section allows you to activate a diagnostic test.

Note *Only certain combinations of tests can be run at the same time. For example, local and remote tests cannot be activated together. Only tests that can be run together will be available for selection.*
LLB and PLB tests are system-initiated and cannot be activated or stopped by the user.

➤ **To stop and/or start tests:**

1. In the **Port Tests** dialog box, select the test(s) that you want to stop and/or start.
2. Click <**Set**>.

The agent stops and/or starts the selected tests accordingly.

➤ **To Start a BERT test:**

1. Checking BERT in the Activate section of the **Ports Test** dialog box.
2. Click <**Set**>.

Bert Counters

➤ **To View the BERT counters:**

- From the **Diagnostics** menu, select **BERT Counters...**

The BERT Counters Dialog Box appears ([Figure 3-57](#)). The results of the BERT test appear in the BERT Counters area, as shown below.

Figure 3-57. BERT Counters Dialog Box

Table 3-51. BERT Counters Parameters

Parameter	Possible Values / Remarks
Slot	The selected slot
Port	The selected port: external-1 , external-2
Card Type	Type of card
BERT Pattern	2E3-1, 2E4-1, 2E5-1, 2E6-1, 2E7-1, 511, 2E10-1, 2047, 2E17-1, 2E18-1, QRSS, 2E21-1, 2E22-1, 2E25-1, 2E28-1, 2E29-1, 2E31-1 and 2E32-1
BERT Error Inject Rate (10E-)	The rate of BERT injection: No Error, 1, 2, 3, 4, 5, 6, 7

- **To Inject Errors while testing:**
 - Click **<Start>**. Clicking **<Stop>** causes the injection of errors to cease.
- **To clear the BERT Error Bits:**
 - Click **<Clear Err Bits>**.
The BERT Error Bits is reset to zero.

- **To set the BERT Polling Interval:**
 1. Click <Polling...>
The BERT Polling Interval dialog box appears.
 2. Set the polling interval by choosing a value from the drop-down list box.
Possible values are 10 to 180 seconds (in 10 second intervals).
- **To display the BERT TSs that have been selected:**
 - Click <TS...>
The Bert TS Assignment window appears.

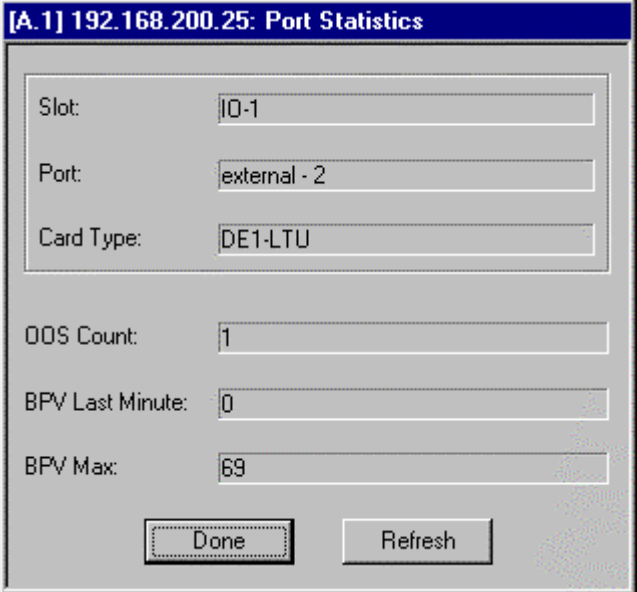
HDSL Modem Test

Note For HDSL cards, when an external port is selected and the Far-End modem is displayed locating the cursor on the panel of the Far-End modem and clicking the right mouse button will display the *Diagnostics>Modem Test...* menu. Clicking <**Modem Test...**> opens the Modem Test dialog box.

Port Statistics

You can view statistical information for HDSL, DT1, DT1/F, DE1, DE1/A, DE1/F, DE3, DT3, D4E1, D8E1, D4T1, D8T1 and STM card ports. The displayed statistics vary according to the type of the selected card.

- **To view port status statistics:**
 - From the **Statistics** menu, select **Port Statistics**.
The Port Statistics dialog box appears ([Figure 3-58](#)).



The dialog box is titled "[A.1] 192.168.200.25: Port Statistics". It contains three input fields for configuration: "Slot" with the value "IO-1", "Port" with the value "external - 2", and "Card Type" with the value "DE1-LTU". Below these are three read-only fields for statistics: "OOS Count" with the value "1", "BPV Last Minute" with the value "0", and "BPV Max" with the value "69". At the bottom are two buttons: "Done" and "Refresh".

Figure 3-58. Sample Port Statistics Dialog Box

Note When there is no Loop in the selected port, the statistics doesn't work. The message "**Port not active or unfit frame No data**" appears.

Table 3-52. Port Statistics Parameters

Parameter	Possible Values / Remarks
Slot	Slot number of the selected card IO1 - IO15
Port	Selected port: external-1, external-2
Card Type	Type of card assigned to the selected slot DT1, DT1/F, DE1, DE1/F, DE3
OOS Count	Number of detected frame alignment loss events since the last time the counter was cleared
BPV Last Minute	Number of BPV (bipolar variation) events detected in the last minute
BPV Max	Highest total of BPV events detected during any one-minute interval since the counter was cleared

➤ **To set the polling interval:**

1. From the Statistics menu, select Port Performance followed by Polling Interval...
The Polling Interval Dialog Box appears ([Figure 3-59](#)).
2. Check the **Polling Enable** check box to enable automatic polling to occur when a statistics dialog box is opened.
3. Select a polling interval by selecting an interval (5 to 60 seconds in 5 second intervals) and press **Set**.

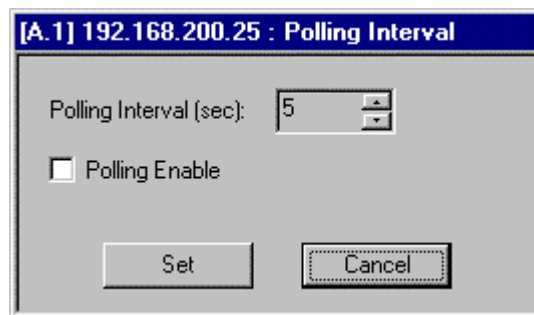


Figure 3-59. Polling Interval Selection Dialog Box

Port Performance

The Port Performance entry does not always exist in the Statistics menu. The menu entries depend on the type of card. For certain cards, the port performance entries are accessed directly from the Statistics menu (not nested).

➤ **To see the current table statistics:**

- From the **Statistics** menu, select (**Port Performance**) followed by **Current Table...**

The Current Data Dialog Box appears ([Figure 3-60](#)).

Figure 3-60. Current Data Dialog Box (Current Table)

Table 3-53. Current Data Parameters

Parameter	Remarks
Slot	Slot number of the selected card IO1..IO15
Port	Selected port: external-1, external-2
Card Type	Type of card assigned to the selected slot DT1-DSU, DT1-CSU, DT3, DE1-DSU, DE1-LTU, DT1/F, DE1/F, DE3, HDSL, STM family
Current Data	Group of data fields which describe the amount of time that error(s) exist(s) in the current measurement interval. Each interval is 15 minutes
Time Elapsed	Number of seconds since the beginning of the current interval Note: For STM (Frac.) cards, this field has a minimum value of 15 seconds
Errored Seconds	Number of seconds in the current interval in which an event or alarm occurred.
Severe Errored Seconds	Number of seconds in the current interval in which at least 320 CRC events or one OOF event occurred.

Table 53. Current Data Parameters (Cont.)

Parameter	Remarks
Unavailable Seconds	Number of seconds in the current interval in which a failed signal state exists. A failed signal state occurs after 10 consecutive severe errored seconds. This state is cleared only after the DXC processes 10 consecutive seconds of data without an SES.
Controlled Slip Seconds	Number of seconds in the current interval in which at least one controlled SLIP event occurred.
Bursty Errored Seconds	Number of seconds in the current interval in which 2 - 319 CRC events occurred.
Degraded Minutes	Number of minutes in the current interval in which the bit error rate (BER) exceeded 1×10^{-6}

Note The fields of the Current Data Dialog Box vary slightly for the different cards. If the system hasn't been up for at least 15 minutes, the message **"System is up less than 15 min. No intervals data"** appears.

- To see the current graph statistics:
 - From the **Statistics** menu, select **(Port Performance)** followed by **Current Graph...**

The Current Graph Dialog Box appears (Figure 3-61).

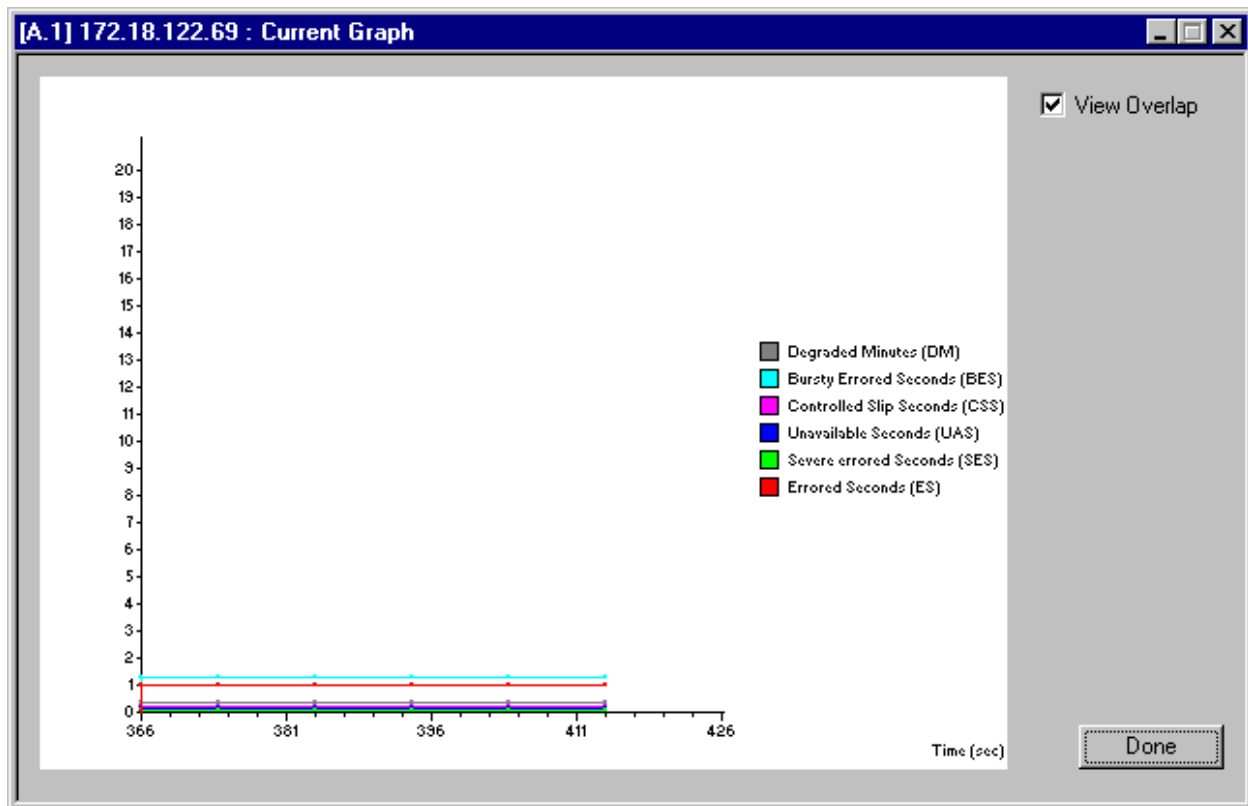


Figure 3-61. Current Graph Dialog Box

You can view a selected 15-minute interval or cumulative totals of the data from the previous 24 hours.

- **To view data from a selected interval from the previous 24 hours:**
 - From the **Statistics** menu, select **(Port Performance)** followed by **Interval Table...**

The Intervals Data Dialog Box appears ([Figure 3-62](#)). This dialog box shows the number of intervals in the last 24 hours in which valid data was collected by the DXC.

Inv No.	From (hh:mm)	To (hh:mm)	ES	SES	UAS	CSS	BES	DM
Total	16:36:07	16:36:07	9	65535	65535	0	1	0
1	16:21:07	16:36:07	0	0	0	0	0	0
2	16:06:07	16:21:07	0	843	833	0	0	0
3	15:51:07	16:06:07	0	900	890	0	0	0
4	15:36:07	15:51:07	0	900	890	0	0	0
5	15:21:07	15:36:07	0	900	890	0	0	0

Figure 3-62. Intervals Data Dialog Box

The data parameters are the same as for the Current Data, except that the performance data relates to the selected interval (**Interval No.**). The data may also be displayed as a graph.

- **To view data from a selected interval from the previous 24 hours on a graph:**
 - From the **Statistics** menu, select **Port Performance** followed by **Interval Graph.**

The Intervals Graph Dialog Box appears ([Figure 3-63](#)). The data parameters are the same as for the Current Graph, except that the performance data relates to the last 24 hours.

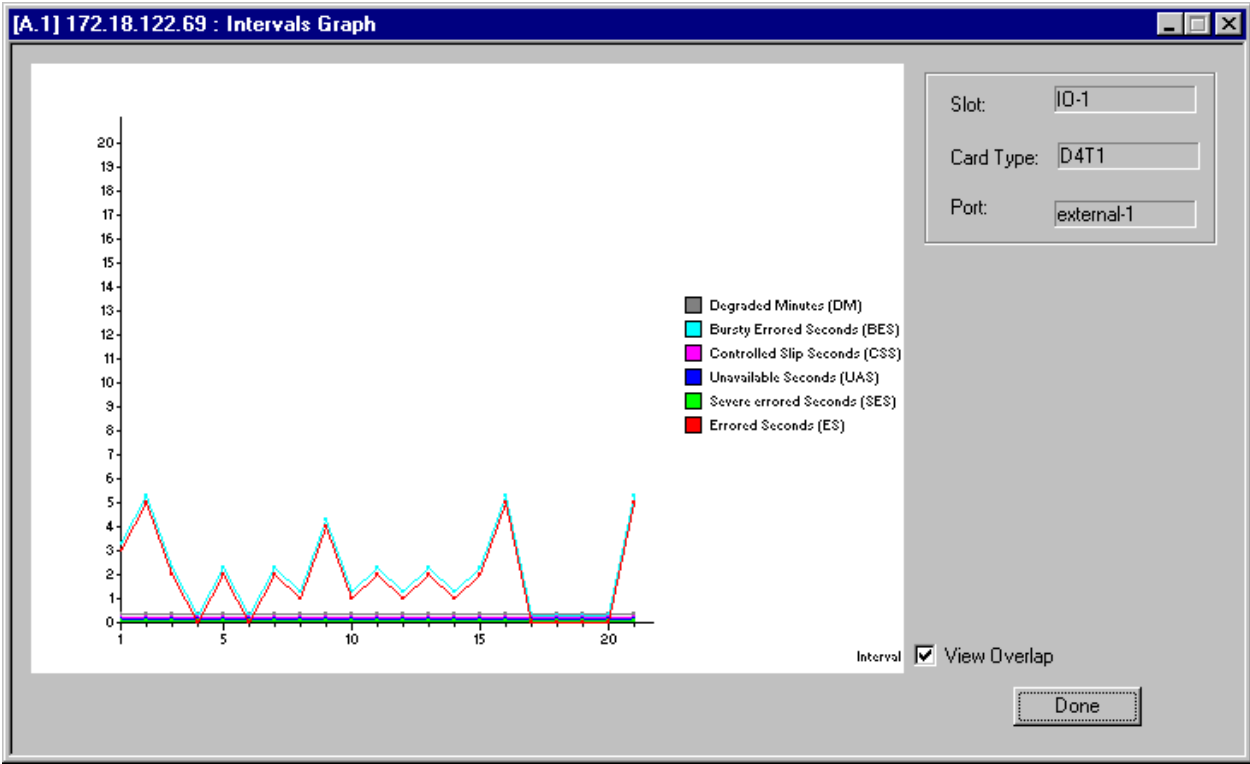


Figure 3-63. Intervals Graph Dialog Box

Displaying FDL Rx Messages

You can view active FDL (Facility Data Link) Rx messages that have passed through the T1 ports of DT1 cards of line type ESF. The FDL Message option is only available to DT1 ESF type cards.

➤ **To view FDL Rx messages:**

- From the **Statistics** menu, select **FDL Message** followed by **Rx**.
The Port FDL Rx Message dialog box appears ([Figure 3-64](#)).

[A.1] 192.168.200.25:Port FDL Rx Message.

Slot:

Port:

Card Type:

SAPI:

TEI:

Control:

Report:

FCS:

FCS Status:

Interpretation	T	T-1	T-2	T-3
CRC Error	0	N>=320	0	N>=320
SE Event	0	0	0	0
FE Event	0	0	0	0
LV Event	0	0	0	0
SL Event	0	0	0	0
Loopback	NO	NO	NO	NO
Reserved	00	00	00	00
Counter	01	00	00	00
Time	16:31:17			

Done Refresh

Figure 3-64. Port FDL Rx Messages

Table 3-54. Port FDL Rx Messages Parameters

Parameter	Possible Values / Remarks
Slot	Slot number of the selected card: IO1 - IO15
Port	Selected port: external-1, external-2
Card Type	Type of card assigned to the selected slot DT1-DSU, DT1-CSU or DT1/F
	The FDL message follows, preceded by the following identifying parameters:
SAPI	Service Access Point Identifier
TEI	Terminal Endpoint Identifier.
Control	One byte: 00..FF
Report	Eight bytes that carry the message contents
FCS	Two bytes that carry the Frame Check Sequence of the message
FCS Status	Indicates status of FCS message If Bad , message probably contains an error Good, Bad
Interpretation	The following fields contain the contents of the four latest FDL messages (T, T-1, T-2, T-3)
CRC Error	Number of CRC errors, specified in the range: None, 1 - 5, 5 - 10, 10 - 100, 100 - 319, 320 or more
SE Event	Severely errored framing event: 0, 1 or more
FE Event	Frame synchronization bit error event: 0, 1 or more
LV Event	Line code violation event: 0, 1 or more
SL Event	Controlled SLIP event: 0, 1 or more
Loopback	Loopback on information bits (payload): Yes, No
Reserved	Value according to the R bi: 01(R=1), 00
Counter	1-second report modulo-4 counter.
Time	Time that the message was received at the management terminal Format is HH:MM:SS, where HH = hours, MM = minutes, SS = seconds.