Symmetricom

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TimeScan Craft

Release 6.0

User's Guide

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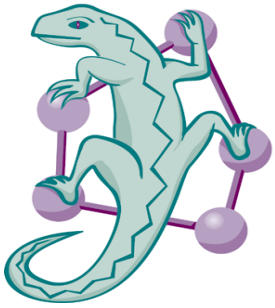

NetMonitor

Management Systems

Getting Started

Welcome to TimeScan Craft for Symmetricom's Digital Clock Distributor (DCD) 500 and TimeSource (TS) 3x00 products. TimeScan Craft runs on Microsoft Windows95/98/NT.

What is TimeScan Craft?

TimeScan Craft is a suite of software tools specifically designed to complement the Symmetricom DCD-500 Series and TimeSource 3x00.

Why would I need to use TimeScan Craft?

TimeScan Craft is designed as the complete local craft terminal for the DCD-500 series and TimeSource 3x00 range. It runs on a IBM compatible personal computer connected to your DCD and TimeSource 3x00 via a serial connection.

TimeScan Craft provides a comprehensive range of features, enabling you to monitor the behaviour and performance of the DCD and TimeSource 3x00 in real time. Complete configuration coverage is provided by simple point and click controls making configuration quick, easy and safe.

What's in this Guide?

Before you begin using TimeScan Craft, we strongly recommend you read this guide. It contains all the information you need to know to exploit the many features of TimeScan Craft to the full.

This guide is composed of several chapters. Each one is self contained and deals with an aspect of the TimeScan Craft suite. For ease of use each chapter also contains a table of contents. A keyword index is provided for use as a quick reference guide. If you have any problems each one has a Frequently Asked Question section which deals with common queries.

Installing TimeScan Craft

To install TimeScan Craft, refer to the Software Release Document that came with the software.

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Chapter 1 Shortcut Tool

What is the TimeScan Craft Shortcut Tool?

TimeScan Craft Shortcut Tool is an application which enables you to setup pre-configured shortcuts for specific DCDs.

Why would I need to use the TimeScan Craft Shortcut Tool?

In order for TimeScan Craft to support its comprehensive range of features it requires you, the user, to pre-define a number of attributes. For example the language you want to use, the communication parameters to be employed for the DCD, etc. It would be tedious if every time you wanted to use TimeScan Craft you must re-enter these parameters. TimeScan Craft Shortcut Tool provides a neat, set once - use many times, method of defining these parameters.

What's in this chapter?

This User Guide chapter contains all the information you need to know to use Craft Shortcut Tool. There is a table of contents below. If you need to use the chapter as a quick reference guide, there is a keyword index at the end. If you have any problems or queries regarding Craft Shortcut Tool try the Frequently Asked Question section.

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Opening the TimeScan Craft Shortcut Tool

Every time you wish to use TimeScan Craft towards a new DCD, you will need to use the Craft Shortcut Tool. It will enable you to define a number of critical parameters TimeScan Craft needs.

Craft Shortcut Tool can be opened by selecting the Shortcut Tool icon from the desktop:

Or from the *TimeScan Craft* entry in the *Start* Menu.

Before you can open Craft Shortcut Tool, you will need to plug the security key:

provided with TimeScan Craft into the parallel port on your computer. If the security key is not fitted an error message dialogue box will appear and you will be unable to run the TimeScan Craft tools. The security key does not prevent connection to a printer via the parallel port, simply connect the printer cable to the security key. If other security keys are required for other applications on your computer then our key may be *piggy-backed* on the existing key[s].

Creating a New TimeScan Craft Shortcut

Let's look at an example of how to create a new DCD.

Once open you will see that Craft Shortcut Tool is composed of four notepad pages, we will examine each one in turn.

The Language Page

The Language Page is the first. It invites you to select the native language you wish to use for this new DCD.

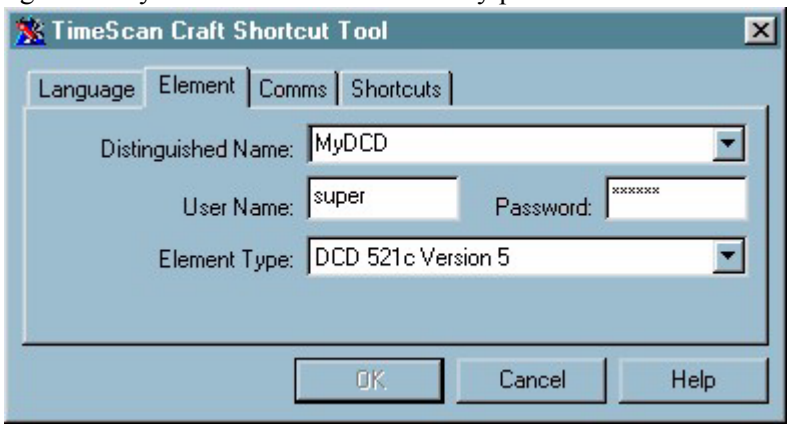
Setting up native language support is described in the Getting Started Chapter.

To select your desired language, choose one from the list provided.

Once you have selected a language the Craft Shortcut Tool will automatically translate itself in order to make your setup task much easier.

The Element Page

The Element Page allows you to define a number of key parameters:



Distinguished Name

This parameter refers to the name you wish to use to refer to this DCD. It does not in anyway affect the settings on the DCD. The name should be unique and should not contain spaces. It is a good idea to use descriptive names so you can easily recognize them - saying that, in our example we have named this DCD 'MyDCD'.

This field can be directly edited, however if you want to edit the setup of a previously created DCD, the list control at the end of the field will list all other DCDs currently defined in your system. Selecting a previously defined DCD will cause the parameters to be read back into the Craft Shortcut Tool so that they may be changed.

User Name

This parameter refers to the User that intends to use TimeScan Craft.

Password

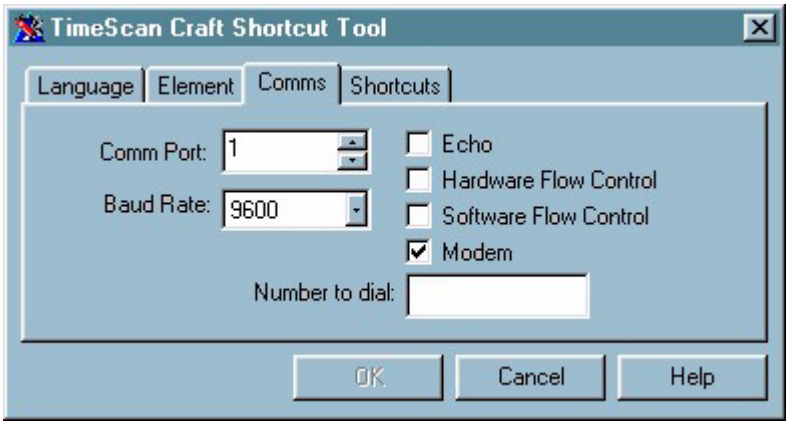
This parameter refers to the password defined on the DCD as the above user's password.

Element Type

This parameter is crucial to the correct functioning of TimeScan Craft. It tells the system what type of DCD it is dealing with. To make selection of this parameter easier you can only choose one from the list provided by the list control. Simply choose the one which best describes the DCD.

The Distinguished Name and Element Type parameters are important, you will notice that the *OK* button at the foot of this window will only become active once these parameters are set.

The Comms Page



The parameters on this page refer to the communication attributes you wish TimeScan Craft to use in order to make contact with the DCD.

Comm Port

This is the number of the comm port to be used on your host computer - not on the DCD. Normally this will be either comm port 1 or comm port 2.

Baud Rate

You must match this parameter with the baud rate of the communication port of the DCD. There are two choices 1200 and 9600.

Echo

You should attempt to match this parameter with the echo setting of the communication port of the DCD.

Hardware Flow Control

Set this check box if the communication port of the DCD is set to use hardware flow control.

Software Flow Control

Set this check box if the communication port of the DCD is set to use software flow control.

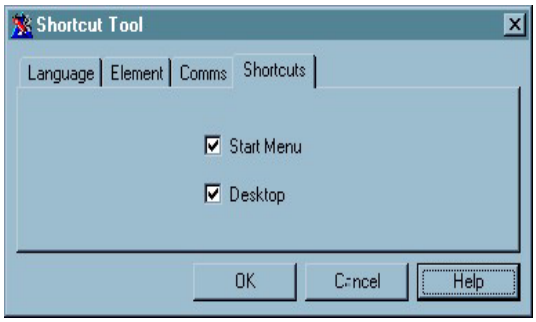
Modem checkbox

Check if you want to connect using a modem.

Telephone Number

Enter a number to automatically dial it and connect without openeing the modem dialog box. Leave blank to use the dialog box.

The Shortcut Page

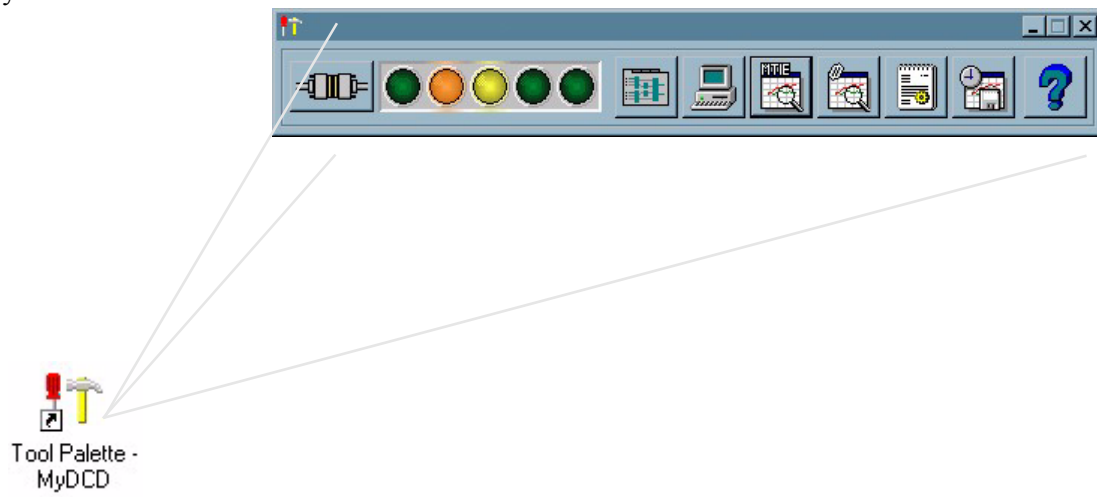


Finally the Shortcut page enables you to decide where you want the shortcuts to this DCD to reside. With *Start* Menu checked, a shortcut will be created under the TimeScan Craft item in the *Start* Menu. With the *Desktop* checked, a shortcut will be created on the desktop.

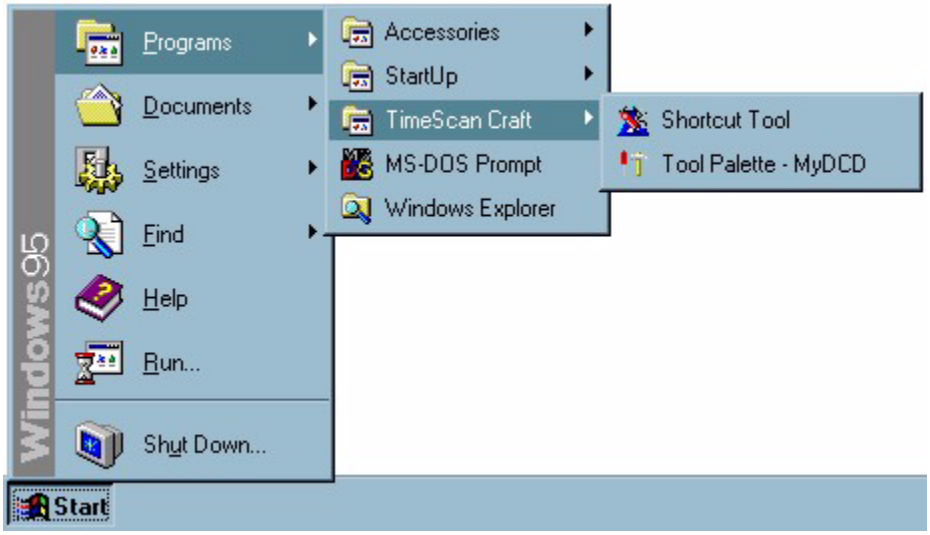
Now that we have gone through all the setup parameters, let's create shortcuts for 'MyDCD' - press *OK*. Craft Shortcut Tool will close. As we checked the Desktop shortcut option in a few seconds a TimeScan Craft Tool Palette shortcut icon will appear on our desktop with the name 'MyDCD'.

Using the New Shortcuts

Selecting desktop shortcuts will launch the *TimeScan Craft Tool Palette* pre-configured for 'MyDCD'.



Similarly selecting the entry in the *Start* Menu will also launch the *Tool Palette*.



Frequently Asked Questions

1 Q. **I have created a Phrase Dictionary but when I attempt to select it its not listed in the available languages... why?**

A. First of all check the file you have created is in the right place. It should be in the ‘Language’ sub-directory of TimeScan Craft. Second check the file is named correctly. It must have the file extension ‘.nls’ otherwise the Craft Shortcut Tool will not recognize it.

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Chapter 2 Tool Palette

What is the Tool Palette?

Tool Palette is an application which is launched from the shortcuts generated by the Craft Shortcut Tool. It will provide you with easy access to all the tools that make up TimeScan Craft.

Why would I need to use the Tool Palette?

Tool Palette forms the central user application for TimeScan Craft. All DCD configuration and monitoring tools are accessible from the Tool Palette. It is also a useful tool in itself, as it provides a real time indication of the alarm status of the DCD.

What's in this chapter?

This User Guide chapter contains all the information you need to know to exploit the features of the Craft Tool Palette. There is a table of contents below. If you need to use the chapter as a quick reference guide, there is a keyword index at the end. If you have any problems or queries regarding Tool Palette try the Frequently Asked Question section.

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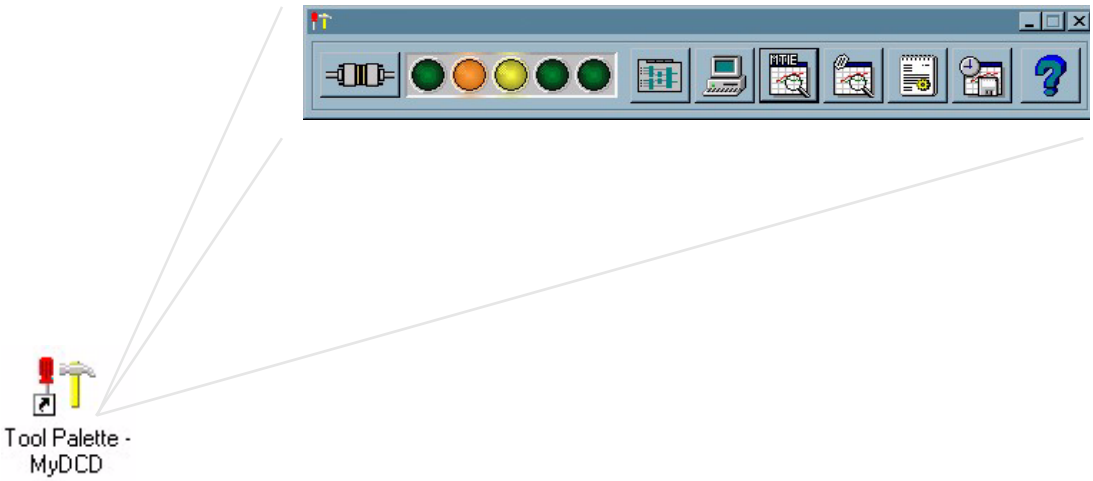
Opening the Tool Palette

Tool Palette can be opened or launched from the desktop and start menu shortcut icons created by the Craft Shortcut Tool.

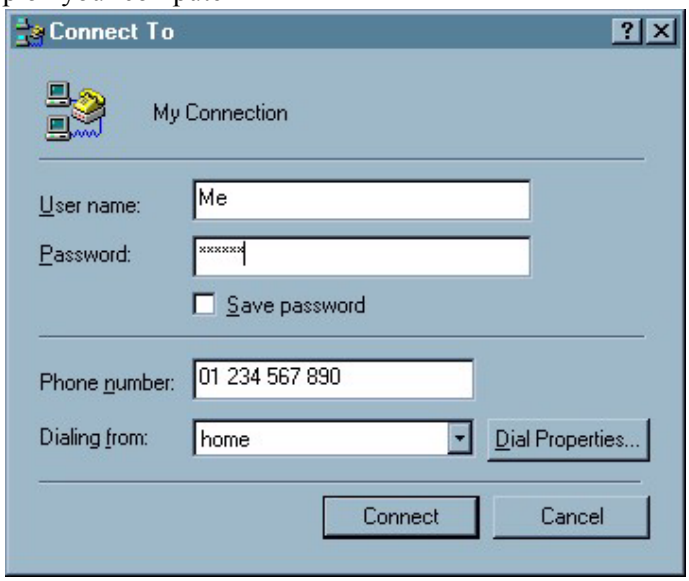


If you have not created any of these shortcuts then you should read the chapter on the Craft Shortcut Tool now.

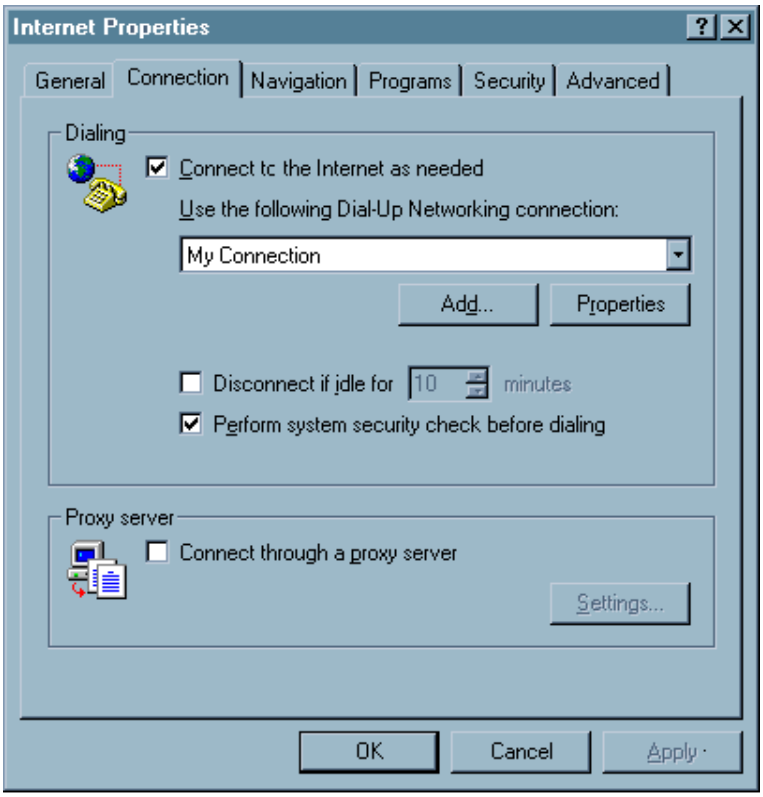
Before you can launch Tool Palette, you will need to plug the security key:

provided with TimeScan Craft into the parallel port on your computer. If the security key is not fitted an error message dialogue box will appear and you will be unable to run the TimeScan Craft tools. The security key does not prevent connection to a printer via the parallel port, simply connect the printer cable to the security key. If other security keys are required for other applications on your computer then our key may be *piggy-backed* on the existing key[s].

If, on opening the Tool Palette, a dialogue box similar to the one below appears then Internet auto connection is setup on your computer



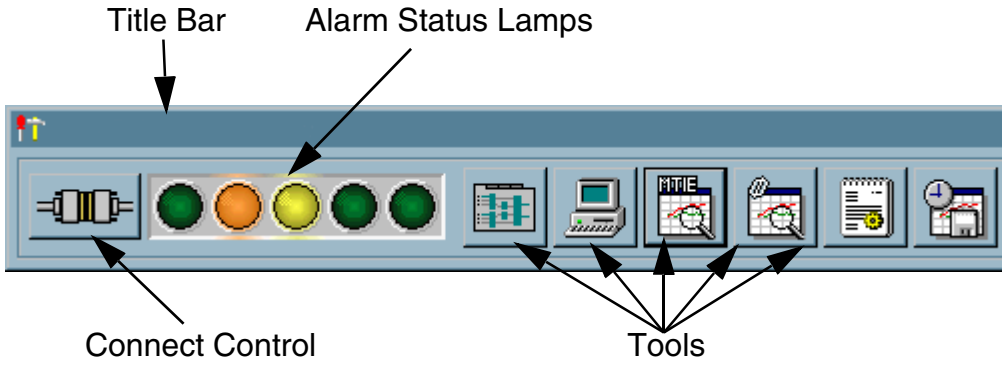
You must disable this facility. Select the *Internet* icon from the *Control Panel*. On the *Connection* page uncheck *Connect to the Internet as needed*



This will prevent this connection being activated every time you start the Tool Palette. When you want to start your internet connection, open *My Computer* on your desktop. Open *Dial-Up Networking* and double click on the connection you want to establish.

A Tour of the Tool Palette

As you can see below, Tool Palette is composed of a number of controls:

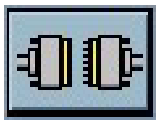


The following sections will discuss each one in turn.

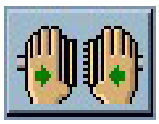
The Connect Control

The Connect Control is a very useful feature, it allows you to monitor and control the status of the connection between TimeScan Craft and the DCD.

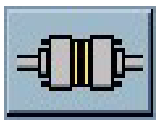
Normally on starting the Tool Palette there will be no connection between TimeScan Craft and the DCD, the connection will be shown as broken:



Tool Palette will automatically attempt to establish a connection and will push the connectors together:

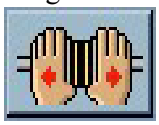


After a short time the connection will be established, and the connectors will plug together:



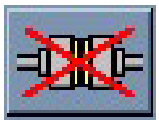
In this state TimeScan Craft is successfully communicating with the DCD and you may launch tools from the palette.

If you wish to close the connection, press the *Connect Control* button. Tool Palette will acknowledge your request by pulling the connectors apart:



After a short time the connection will be broken and will return to the no connection state. In this state none of the TimeScan Craft tools, including Tool Palette, may communicate with the DCD. If, subsequently, you wish to reconnect, press the *Connect Control* button and Tool Palette will attempt to re-establish the connection.

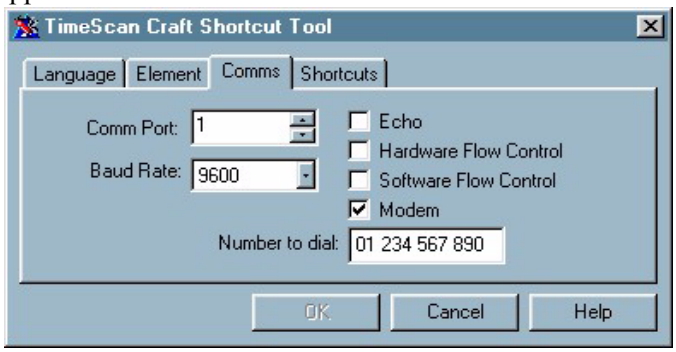
If a suitable connection cannot be established, due to cable disconnection for example, Tool Palette will provide a message dialogue with an explanation of the problem. The *Connection Control* will show connection is not possible:



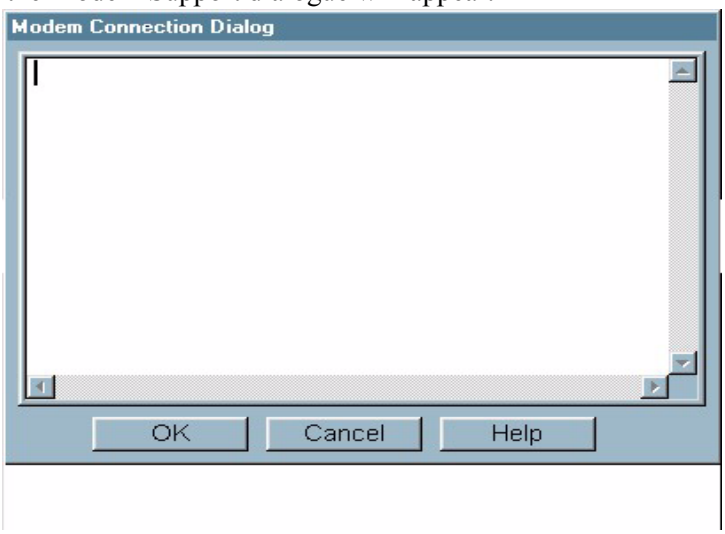
If, for example, the cable is reconnected then Tool Palette will automatically recover the connection.

If Tool Palette is closed while one of the TimeScan Craft tools is open, the connection between TimeScan Craft and the DCD will remain until the last tool is closed. If Tool Palette is closed and no other TimeScan Craft Tool is open, the connection will also be closed.

Modem Support is used if the *Modem* checkbox is selected in the Toolpalette shortcut.



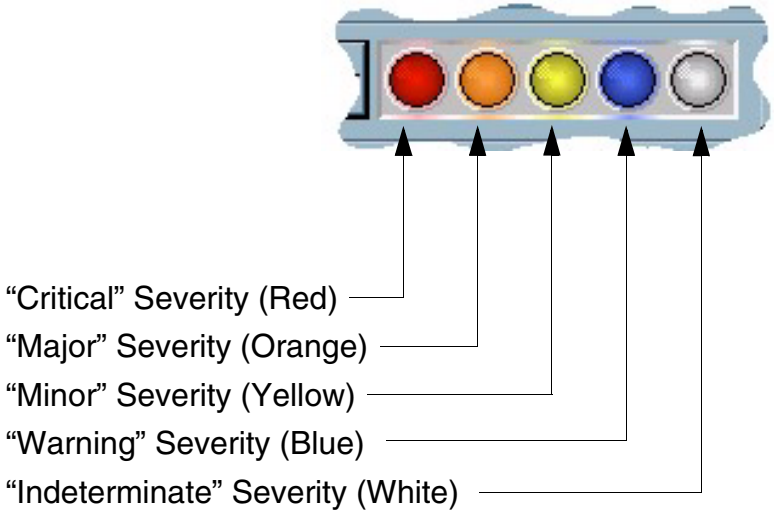
The Shortcut Tool also allows a telephone number to be entered. If a telephone number is entered Modem Support will automatically dial for you. If a telephone number is not entered the Modem Support dialogue will appear.



If a telephone number is not specified in the shortcut to the ToolPalette you will need to type the appropriate modem command to connect. From here you can type modem commands, such as the Hayes commands. For example type '*ATD<telephone number>*', to dial a telephone number. Once the DCD has been reached, i.e. TL1 commands can be sent, click the *OK* button. This confirms that the connection has been successful.

The Alarm Status Lamps

The array of five lamps on the Tool Palette shows the alarm status of the DCD in real time. There is a lamp for each level of alarm severity:.



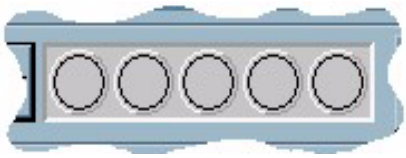
Each lamp on the status bar, when lit, indicates the presence of at least one alarm of the corresponding severity. If there are no alarms of that severity on the DCD, the lamp will be green.

On Tool Palette start-up and subsequently when TimeScan Craft detects the DCD has reported a new alarm the corresponding alarm lamps will flash. The flashing can be made to stop by pressing the left mouse button over the Alarm Status Bar.

Selecting the right mouse button will produce a menu offering access to three facilities:

- *Alarm List*, a text list of the current alarms reported by the DCD.
- *Equipment Condition List*, a text list describing the current DCD equipment conditions.
- *Transaction Log*, a text list containing the last one hundred communication interchanges between TimeScan Craft and the DCD.

When TimeScan Craft is disconnected from the DCD or is unable to connect, the Alarm Status Bar is shown as inactive:



The Tools

Configuration Manager

The Configuration Manager is an extremely useful tool. It will show you exactly how the DCD is operating; active inputs, signal and equipment states, etc. Configuration Manager also provides point and click configuration access. This tool can only be launched when the Tool Palette shows there is a connection established between TimeScan Craft and the DCD.

TL1 Terminal

TL1 Terminal, as its name suggests, is a tool for sending TL1 commands to the DCD. You can use it for command file macros. This tool can only be launched when the Tool Palette shows there is a connection established between TimeScan Craft and the DCD.

Performance Manager

Performance Manager is a tool dedicated to monitoring and recovering data from the synchronisation measurement ports provided by PSM modules. This tool can only be launched when the Tool Palette shows there is a connection established between TimeScan Craft and the DCD.

MTIE / TDEV Viewer

MTIE / TDEV Viewer is a graphing tool which may be used to view the Mean Time Interval Error (MTIE) and Time Deviation (TDEV) data recovered and stored by the Performance Manager.

Phase Viewer

Phase Viewer is a graphing tool which may be used to view the Average Phase data recovered and stored by the Performance Manager.

Help

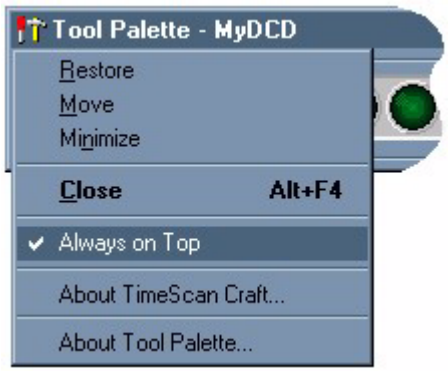
The Help tool launches a window help file containing information about Tool Palette. Help can be launched regardless of the TimeScan Craft-DCD connection state.

The Title Bar

The Title Bar displays the name of the DCD TimeScan Craft is working toward.

By default Tool Palette has an ‘always on top’ property. That is, it cannot be obscured by another window - useful if you need to be constantly aware of the DCD alarm state. However, you can disable this property. Selecting the check against ‘*Always on Top* in the *System* menu will allow

other windows to be placed over the Tool Palette. Similarly, selecting the check again will restore the *on top* property.



Frequently Asked Questions

2 Q. **I have launched the Tool Palette from a shortcut. The Connect Control tells me that the DCD is not responding but I have checked the serial cable and it is plugged in. What else do I need to check?**

A. First of all check the serial cable is plugged into the correct com port on your computer. To find out which port you should be using, run the Shortcut Tool, select the name of the DCD from the 'Distinguished Name' pull-down list on the 'Element' page. The 'Comm' page will show you which com port TimeScan Craft is using for this DCD.
If the cable is correctly fitted then there may be a mismatch between the baud rate the DCD com port is using and the baud rate you have selected for TimeScan Craft.

3 Q. **I have launched the Tool Palette from a shortcut. The Connect Control tells me that it cannot use the specified com port. How do I get around this?**

A. Check that another application has not already claimed the specified com port. If you are running any terminal or modem applications other than TimeScan Craft then close them down and try again.

4 Q. **Can I quit Tool Palette or close it down to the start menu without affecting any of the TimeScan Craft tools I have running?**

A. Yes.

5 Q. **The Alarm Status Bar shows some alarms. I left clicked the status bar and the lamps stopped flashing. Shortly after one or more of the lamps started to flash again. Why?**

A. TimeScan Craft has detected that a new alarm or alarms have been reported by the DCD after you left clicked the status bar. To find out the nature of the alarms, right click the status bar and look in the alarm list.

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Chapter 3 TL1 Terminal

TL1 Terminal is a tool provided with TimeScan Craft which enables you to send and receive Transaction Language 1 (TL1) format messages to and from the DCD.

Why would I need to use TL1 Terminal?

TL1 Terminal is useful if you prefer to use the native command language of the DCD or if you need to capture textual representations of DCD behaviour, for example, alarm lists or logs.

What's in this chapter?

This User Guide chapter contains all the information you need to know to use the features of TL1 Terminal. Below there is a table of contents for this chapter. If you need to use the chapter as a quick reference guide, there is an index at the end.

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Opening the TL1-Terminal Application

The TL1-Terminal Application can be opened by double clicking on its icon .

When successfully opened the screen shown in Figure 1 will appear

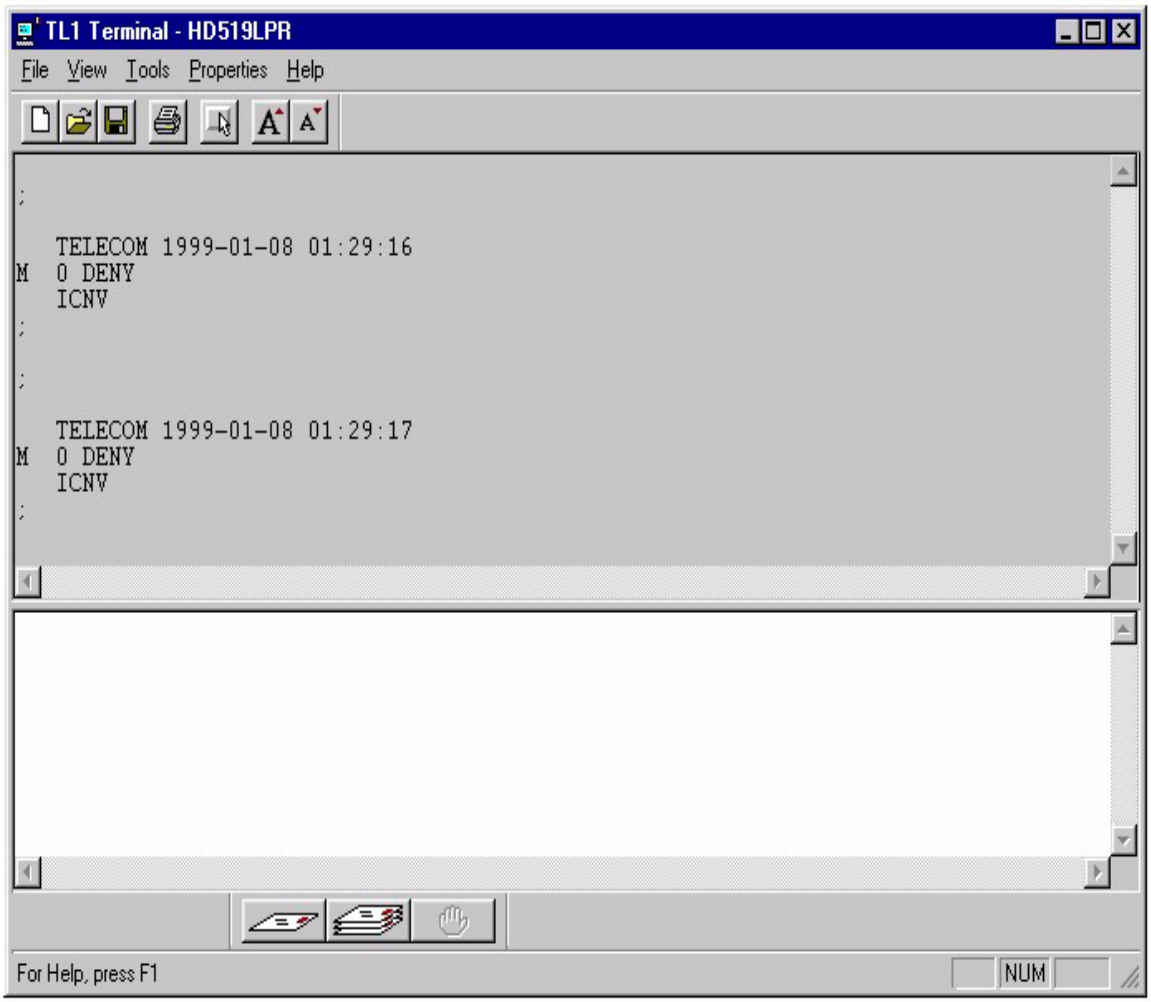

Figure 1 The Main TL1_Terminal Application

Sending Single Commands

Sending a command to the DCD is quick and easy. Click the mouse over the command area (the lower region of the screen) and an edit cursor will appear. Type the command you wish to send. The command is only sent at your request, so typing errors can be corrected at any time. To send the command either hit the *Return* key or press the *Send* button. The response to your command will appear in the response area.

If you wish to repeat a command, move the edit cursor onto the line of the command and hit return or the *Send* button. Command strings may be edited by using conventional editing facilities:

Left / right arrow keys

Backspace / forward delete

Shift left / right arrow to highlight text

Control -x to delete highlighted text

Control -c to copy highlighted text

Control -v to paste

Control -z to undo last edit

Making Shortcuts to Regularly Used Commands

You may find that during the course of your work you are using the same TL1 commands on a regular basis. It can be tedious re-typing commands so TL1 Terminal provides user definable *Shortcuts*.

Shortcuts are simply recordings of commands which can be replayed by a single button press. To define your own shortcuts, select the *Shortcut Tool* from the toolbar. The dialogue shown in Figure 9 on page 10 will appear, listing the shortcuts already defined, if any.

Let's add one. Select the *Add* button. The Edit Shortcut dialogue, shown below, allows you to type the full command string to be invoked by this shortcut.

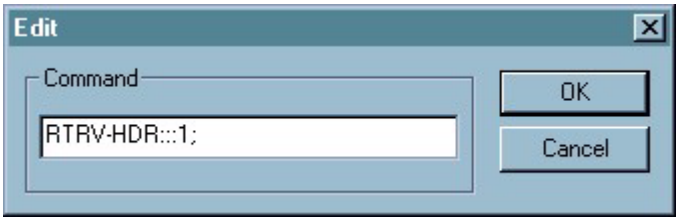

Figure 2 The Edit Shortcut Dialogue Box

The command string may be edited by using conventional editing facilities:

Left / right arrow keys

Backspace / forward delete

Shift left / right arrow to highlight text

Control -x to delete highlighted text

Control -c to copy highlighted text

Control -v to paste

Control -z to undo last edit

A good tip for creating shortcuts is to use commands entered in the command window. Simply highlight the command and press *Control-c*. This will copy the command into the paste buffer. Open the shortcut dialogue and select *Add*. If you then press *Control-v* the command will be pasted into the edit field. This method is much quicker than re-typing the command and is not prone to typing errors.

If you are happy with the command you've defined, press the *OK* button to save it or *Cancel* to scrub it.

It is possible to define up to ten shortcuts, all listed within the Shortcut dialogue:

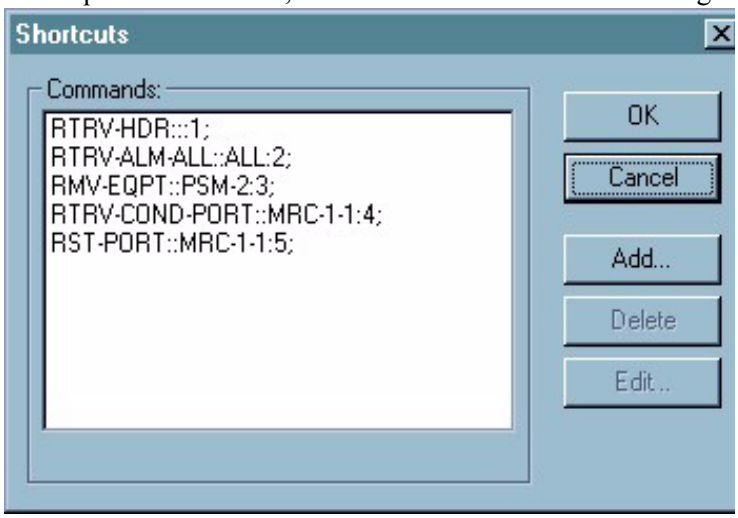

Figure 3 The Shortcuts Dialogue

To edit an existing shortcut, double click the shortcut in the list or select it and press the *Edit* button.

To delete a shortcut, select it from the list and press the *Delete* button.

Any modifications to the Shortcut List may be accepted by pressing the *OK* button or scrubbed by pressing *Cancel*.

Now that we've created a few shortcuts how do we use them? At the foot of the TL1 Terminal window a bar will appear containing a number of buttons - one for each shortcut defined. If the bar isn't there, it has been turned off - check the *Shortcuts* entry in the *View* menu list.

Figure 4 The Shortcut Buttons

To use a shortcut ensure the cursor in the command window is on a new line and press the desired shortcut button - the recorded shortcut command is replayed at the cursor position. The command can be sent using the *Send* button or *Return* key, or it can be edited in the command area before despatch.

When TL1 Terminal is closed the shortcuts are automatically saved and restored the next time you use it.

Shortcuts are useful when you need to recall single commands but what if you need to record and replay lists of commands? TL1 Terminal is also capable of creating and using *Command Files*...

Recording and Re-Playing a Command File

Let's assume we want to use TL1 Terminal to perform a certain configuration task. The task is composed of several commands and its likely that we may need to perform the same task many times over. The best solution would be to enter the command sequence once, ensure that it works and then record it so we can play it back the next time we need it. This is exactly what TL1 Terminal allows you to do.

The first step is to ensure the command window is clear, see "Clearing a Text Area" on page 8.. Now perform the configuration task as you have done previously. When you've finished we need to save all the commands you have just executed, to do this select the *Save* tool from the toolbar. The Save Area dialogue, shown in Figure 5, will be displayed. Select the *Command Area* control from the Save Area dialogue:

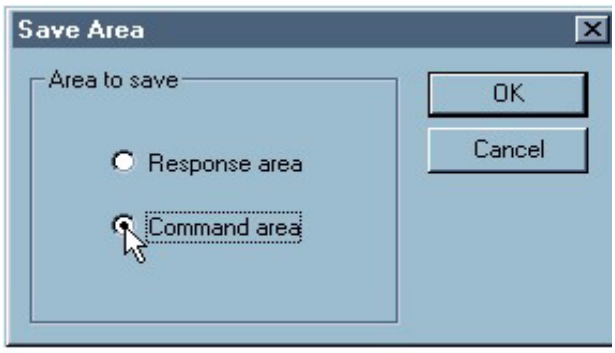

Figure 5 The Save Area Dialogue Box

Press *OK* to accept the choice. A standard *Save* dialogue will appear which will enable you to select a file name and a directory location for your command recording.

Save will write the file, *Cancel* will scrub the save procedure. Now your configuration task is recorded ready for the next time you require it.

Let's now look at how to re-play a command file. The first step is to ensure the command window cursor is on a new line as the commands will be re-written starting from the cursor position. Select the *Open* tool from the toolbar. This will generate a standard *File Open* box, from which you may choose the command file to open.

On opening a command file, the contents will be automatically written in to the command area, ready for execution. To execute the contents of the command file, place the cursor at the position of the first command and either select the *Send* button to execute each command one at a time, or select the *Multiple Send* button to automatically execute all commands one after another. If you need to stop sending, press the *Stop* button , which will become enabled once you have started sending.

Of course, as they are written into the command window, you can edit the commands in the usual manner before executing them.

A good tip is to use the default file type *Text files (*.txt)* when creating command files. Then, if you want to edit a command file without using the TL1 Terminal, simply double click the command file's icon in Windows Explorer, and it will be automatically opened in the default text editor.

A Tour of the Toolbar

At start-up TL1 Terminal provides a toolbar at the top left of the main window containing some useful tools.

Figure 6 The Terminal Toolbar

In the following sections we will look at the purpose of each tool, but first we will look at the toolbar itself. The toolbar is a *dockable toolbar* - that is to say you can move it about. By selecting the edge of the toolbar it can be repositioned anywhere around the rim of the main window. It can even be dragged off to form its own window, which will always remain on top of the working screen area.

If you need to maximize the available screen area, you can hide the toolbar by clicking off the check against *Toolbar* in the list in the *View* menu.

Clearing a Text Area

The first tool on the toolbar is the *Text Clear* tool. This enables you to clear contents of either the response area, the command area or both. Selecting this tool generates the clear area dialogue.

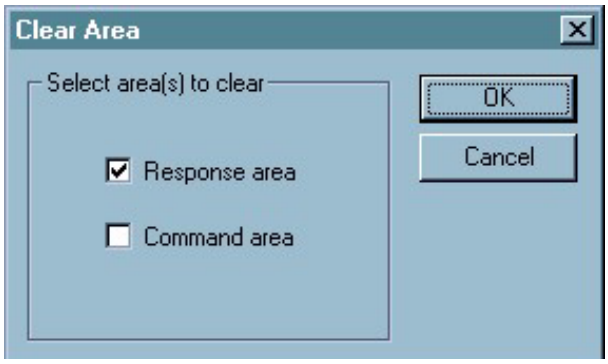

Figure 7 The Clear Area Dialogue Box

Simply click in the Check Box of the area you want to clear and press *OK*. This facility can also be invoked from the *Clear Area* entry in the *File* menu.

Opening a Command File

The *Open Command File* tool enables you to select a command file. For a full explanation of command files, see see “Recording and Re-Playing a Command File” on page 6.. This facility can also be invoked from the *Open Command File* entry in the *File* menu.

Saving a Text Area to File

The *Save* tool provides a method of saving the contents of a text area to file. Selecting this tool generates the Save Area dialogue, shown in Figure 5.

We have already touched on this facility in ‘Recording and Re-Playing a Command File’ on page 6, where we saved the contents of the *Command Area*.

Simply select the desired area control in the Save Area dialogue box, and press *OK*. A file selector dialogue will be generated which will enable you to define the name and location of the file to be created. This facility can also be invoked from the *Save Area* entry in the *File* menu.

Printing a Text Area to Hardcopy

The *Print* tool provides a method of saving the contents of a text area to hardcopy. Selecting this tool generates the print area dialogue

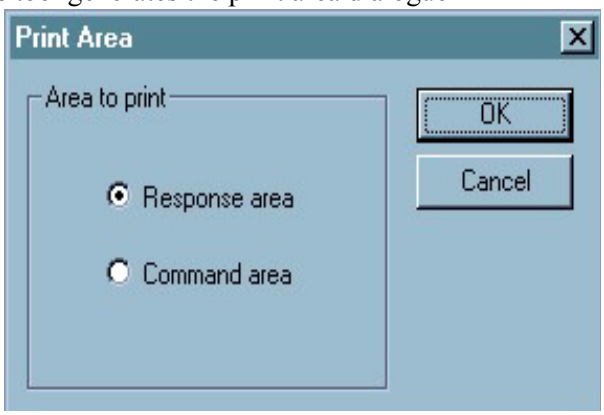

Figure 8 The Print Area Dialogue Box

This is similar to the *Save Area* tool mentioned earlier. Select either the *Response Area* or *Command Area* button in dialogue box, and press *OK*. A Print / Print Properties dialogue box will be displayed which will enable you to chose the name of the printer to be used, the number of copies, etc.

It should be noted that this tool may only be used if the host computer is connected to a properly installed printer. This facility can also be invoked from the *Print* entry in the *File* menu.

Controlling Command Shortcuts

The *Shortcut* tool provides access to the list of shortcuts in the shortcut dialogue, shown in Figure 9.

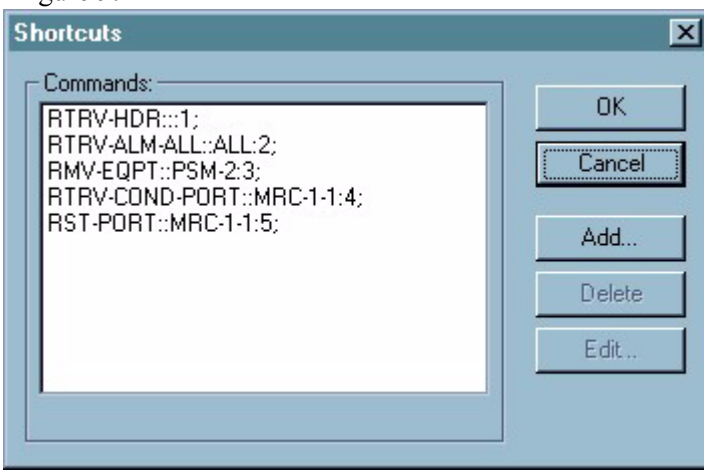

Figure 9 The Shortcuts Dialogue Box

Managing shortcuts is discussed in ‘Making Shortcuts to Regularly Used Commands’, page 4. This facility can also be invoked from the *Shortcuts* entry in the *Tools* menu.

Zooming Into The Text Areas

final two tools in the toolbar provide a method of increasing and decreasing the text size in either the response area or command area. To change the text size, click the mouse within the area to be modified and select the appropriate tool. Each tool may be used repeatedly to provide a wide range of text sizes.

TL1 Terminal Properties

TL1 Terminal has some useful properties which you can control to make command - response interchanges easier. Selecting the *Properties* item from the menu bar will result in the following dialogue window:

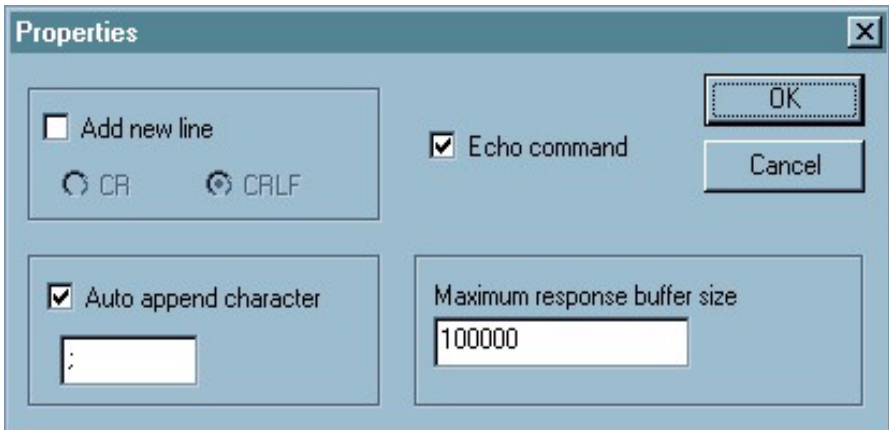

Figure 10 The Properties Dialogue

Under normal circumstances, the default properties adopted by TL1 Terminal have been selected for optimum performance towards the DCD. Let's look at each property:

Add new line

If the *Add New Line* check box is selected, then the control character combination selected, either *Carriage Return (CR)* or *Carriage Return - Line Feed (CRLF)* will be automatically appended to all commands. This property should not be used for the DCD.

Auto Append Characters

If the *Auto Append Characters* check box is selected, (default) then the ASCII characters entered in the text box below it will be automatically appended to all commands, if they are not already present.

For TL1, semi colon (;) is defined as the terminating character, i.e. no commands strings are actioned until a semi colon is encountered. The default for TL1 Terminal is that this property is enabled and a semi colon is the automatically appended character. This means that if you send a command but forget to type the terminating semi colon (a common error), TL1 Terminal will detect the absence of the semi colon and automatically add one.

Echo Command

If the Echo Command check box is selected (default), then the commands you enter will automatically be shown in the response area in the appropriate positions. This property is useful for generating action logs as the commands and responses are recorded in sequence.

Maximum Response Buffer

The value in the *Maximum Response Buffer Size* text box represents the number of characters stored by TL1 Terminal in the response buffer. When the buffer is filled, the oldest information will be discarded to make space for new information, and a warning message will appear at the top of the scrolled response area.

Frequently Asked Questions...

6 Q. **I sent a TL1 command. The cursor was replaced by an hour-glass for a few seconds and the message 'Send command operation failed' appeared in the response window... why?**

A. TL1 Terminal waited for a short time but did not receive a response to your command. Check that you terminated the command string with a semi-colon (;).

A good tip is to ensure that the auto append character property (see Auto Append Characters, page 11) is enabled and set to semi-colon (;). If so, even if you forget to terminate a command properly, TL1 Terminal will do it automatically.

7 Q. **I want to enter a new command into the command area. The cursor is sat at the end of the last command I sent. I can't make it go onto the next line without pressing Return.**

A. Yes you can, try Shift - Return. This will act in the same way as Return but will not cause the last command to be sent again.

8 Q. **I have tried to print an area to hardcopy but nothing is printed... what can I do?**

A. The printer you have chosen is setup to only produce simple text. You must use a printer which is set up to provide graphic support.

9 Q. **There is no Toolbar displayed... how can I get it back?**

A. The presence of the toolbar is controlled via the *Toolbar* item listed in the *View* menu from the menu bar.

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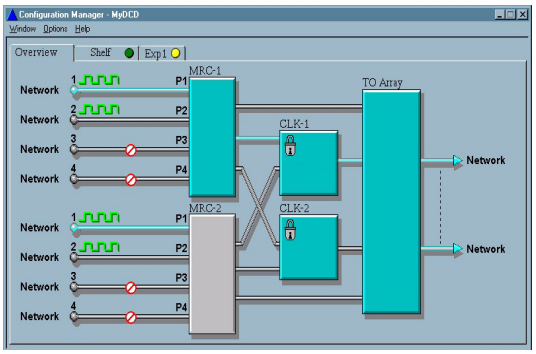
Chapter 4 Configuration Manager



The Configuration Manager is an application which is part of the TimeScan suite of applications. It will provide you with a real-time picture of the internal state of a DCD and simple point and click controls to configure the DCD.

Why would I need to use the Configuration Manager?

The Configuration Manager is useful if you need to quickly see exactly how the DCD is managing the synchronisation signals. You can use it to configure all the signal processing functionality of the DCD without typing a single TL1 command.

What's in this Chapter?

This chapter contains all the information you need to know to fully exploit the potential of the Configuration Manager. The "Configuration Manager Tour" (page 49), provides a quick description of the features and facilities of the Configuration Manager. The "How To.." section (page 77) explains how to configure the facilities of the DCD.

There is a section with specific instructions for the TimeSource 3000 element (page 67).

If you need to use the chapter as a quick reference guide, there is an index at the end (page 121).

If you have any queries regarding the Configuration Manager try the Frequently Asked Question section (page 120).

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Opening the Configuration Manager

The Configuration Manager is launched either from the TimeScan Craft ToolPalette or by double clicking on an icon in the Network Browser.

Configuration Manager Tour

The first thing to notice about the Configuration Manager is that it provides a number of tabbed note book pages. In later sections of this tour we will look at each page in detail. First we will look at functions which are common to each page.

The Menu Bar

Configuration Manager supports a number of useful facilities accessed from the Menu Bar at the top of the window.

Window Menu

The Window Menu provides a list of the standard facilities: *Print, Print Preview* and *Print Setup* which allow you to configure and review hardcopy generated by Configuration Manager. *Exit* will terminate this session of Configuration Manager use.

Options

As we shall see later, you can use Configuration Manager to configure the DCD. By default, every time you request a configuration change, Configuration Manager will require you to provide confirmation. This behaviour can be turned off by removing the *Confirm* tick in this menu. Conversely it can be turned on by re-checking *Confirm*.

Help

This menu provides access to an about box containing author and version number information for Configuration Manager.

The Status Bar

Towards the bottom left hand corner of the main window is a panel known as the *Status Bar*

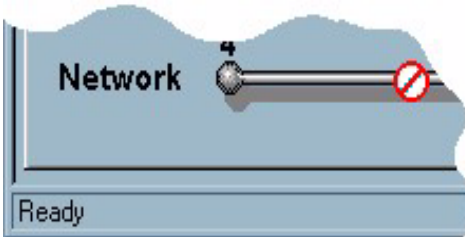


Figure 11 Configuration Manager Status Bar

The Status Bar provides an insight into the operation of the Configuration Manager.

On start up, the Configuration Manager must perform a range of tasks in order to determine the correct configuration and status of the DCD. The following paragraphs give the sequence and meaning of the Status Bar messages produced at start-up:

Attempting to connect to [DCD distinguished name]

The Configuration Manager is attempting to establish a connection. This step will normally take a fraction of a second. On connection the status will change to:

Connected to [DCD distinguished name]

Once connected Configuration Manager will start to collect the information it requires to correctly depict the state of the DCD and the status will change to:

Fetching initial data

This phase normally takes a few seconds and is dependent on the number of shelves and equipment modules that compose the DCD. Once the DCD state is determined the status will again change to:

Ready

This is the idle state of the Configuration Manager. In this state the communication path towards the DCD is functioning correctly and the status information currently displayed is correct. Configuration Manager is ready to accept any operator actions.

We shall see later in this chapter that it is possible to use the Configuration Manager to set the configuration of the DCD. When a change in configuration is requested the status is set to:

Sending command

This indicates that the Configuration Manager is busy performing the action you have requested and will not accept another.

The Overview Page

Let's look at the first page of the tabbed set of pages.

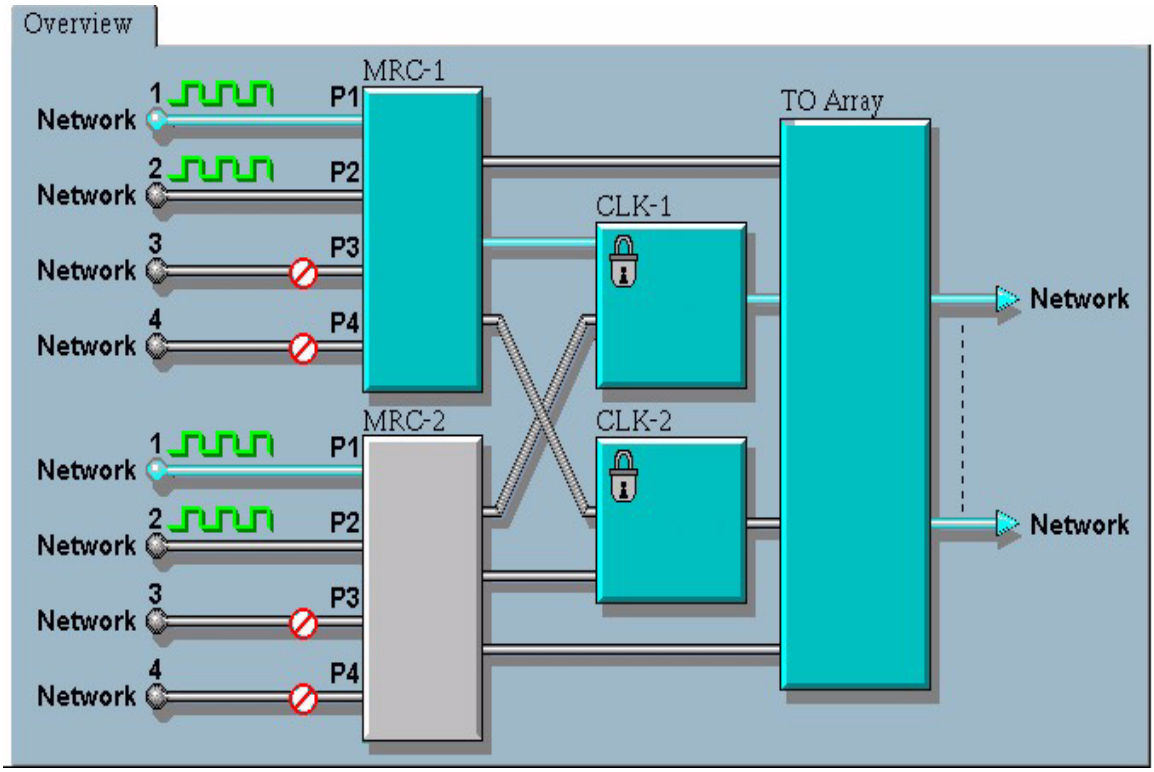


Figure 12 The Overview Page

This page depicts the current synchronisation status of the DCD. The structure of the page has been purposely designed to instantly convey a great deal of information in a readily understandable format. The following paragraphs provide an in-depth description of this page.

Interpreting the Overview

The main structure of the graphic is based upon the conceptual skeleton of the DCD:

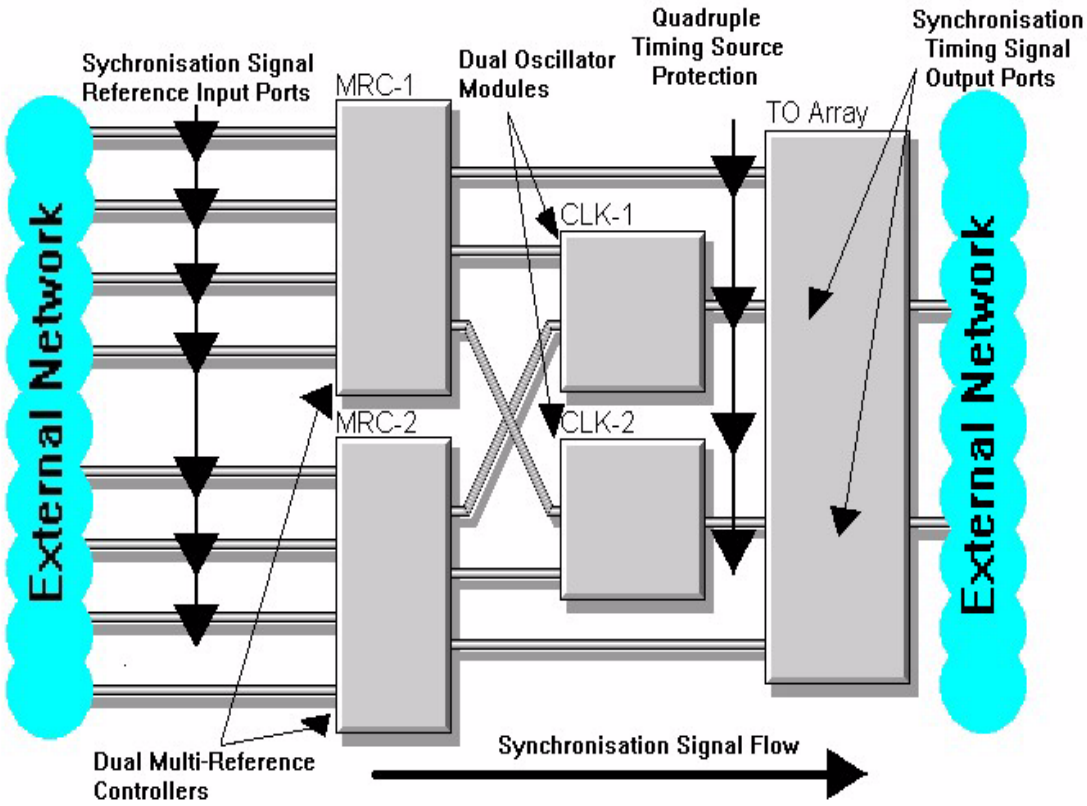


Figure 13 Conceptual Diagram Of A DCD (Digital Clock Device)

Let's examine the graphics in more detail. We will start with the synchronisation signal reference input ports, shown to the left and work through the DCD architecture to the timing (TO) output ports, shown to the right.

Each DCD is capable of incorporating two Multi-Reference Controllers, (MRC 1 & 2), each with up to four external signal reference input ports. Each input port is depicted as a *pipe* along which a signal can flow to the respective reference controller functional block. The MRCs feed signals to two Clock Oscillator Modules (CLK 1 & 2) and directly to an array of synchronisation timing signal output ports (TO array).

The CLK modules are depicted as function blocks capable of accepting signals from either of the MRCs, and feeding signals to the TO array. At this point in the diagram, the quadruple timing source protection is quite apparent.

The TO array, although depicted as a single functional block, actually represents all the timing signal output ports supported by the DCD within the Master *and* any Expansion shelves. There are potentially too many output ports to be depicted individually, hence the existence of many ports is implied.

Once the basic skeleton is understood, interpreting this page becomes much easier. As you can see, normally the skeleton is augmented with a range of graphics conveying information on

signals, activity and equipment states, etc. The following sections will look at the areas we have just examined in some depth, and explain the significance of each graphic.

Synchronisation Reference Input Ports

As mentioned earlier each DCD may support up to eight reference signal input ports, up to four per MRC. The status of each port can be broken down into several components as illustrated below:

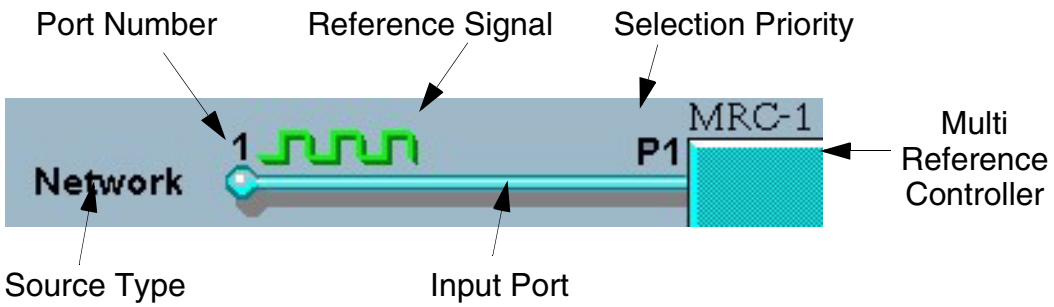


Figure 14 Input Port (detail)

Let's look at each component:

Input Port

Each input port is depicted as a *pipe* feeding a reference signal into its Multi Reference Controller. There are several states associated with input ports:

Active - The input port is currently selected to provide the reference signal to its MRC.

An active input port is shown as a light blue pipe:

Stand-by - The input port is *not* currently selected to provide the reference signal to its MRC.

A stand-by input port is shown as a light grey pipe:

Removed - The input port has been conceptually removed. The port still exists but it has been temporarily removed from the pool of ports from which the MRC may select its reference. The port is effectively barred.

An input port in this state is shown as a light grey pipe with a barring symbol:

Deleted - The input port has been conceptually deleted. The port still exists but it has been deleted from the pool of ports from which the MRC may select its reference.

An input port in this state is shown as a silhouette:

Port Number

Each reference input port has a *Port Number* associated with it for ease of identification. Port numbering is relative to the host MRC card.

For example, the correct identity of the port drawn at the top of the Overview Page (Figure 12 on page 51) is:
Port 1 - MRC1.

Source Type

Each reference input port has a *Source* attribute associated with it. This attribute defines the source of the reference signal applied to the port. The possible source types are:

- Network
- GPS
- LORAN
- Caesium

Reference Signal

Each *Reference Signal* is depicted as a wave form appropriate to the current state of the signal. There are several states associated with reference signals:

Digital Signal Present and Satisfactory - There is currently a digital reference signal available at this input port. The signal itself is deemed to be a valid synchronisation reference as it has not violated any of the performance thresholds currently set on this port.

A digital reference signal in this state is shown as train of green square waves:

Analogue Signal Present and Satisfactory - There is currently an analogue reference signal available at this input port. The signal itself is deemed to be a valid synchronisation reference as it has not violated the Fractional Frequency performance threshold currently set on this port.

An analogue reference signal in this state is shown as train of green sinusoidal waves:

Digital Signal Present but Thresholds Violated - There is currently a digital reference signal available at this input port. The signal itself is deemed to be an unsuitable synchronisation reference as it may have violated one or more of the performance thresholds currently set on this port, (Alarm Indication Signal, Cyclic Redundancy Check, Out Of Frame, Bi-polar Violation or Fractional Frequency).

A digital reference signal in this state is shown as train of red square waves:

Analogue Signal Present but Thresholds Violated - There is currently an analogue reference signal available at this input port. The signal itself is deemed to be an unsuitable synchronisation reference as it may have violated the Fractional Frequency performance threshold currently set on this port.

An analogue reference signal in this state is shown as train of red sinusoidal waves:

No Signal Present - There is currently no reference signal available at this input port. A reference signal in this state is shown as flat red line:

Input Reference Modules

The DCD supports a range of Input Reference Modules. In general all such modules fall into two groups: Clock Input (CI) (single input) modules and Multi Reference Controllers (MRC) (up to four inputs).

For the purposes of this document we will concentrate on MRCs. The functionality of CIs may be considered a subset of that of MRCs.

The DCD is normally equipped with two *Input Reference Modules*, illustrated on the graphic as two panels. For an MRC the panel is fed by four reference input ports. For a CI or ACI the panel is fed by a single reference input port.

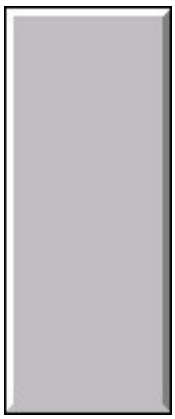
There are several states associated with *Input Reference Controllers*:

Active - The module is currently selected to provide the reference signal to the *Clock Modules* or directly to the *Timing Outputs*.

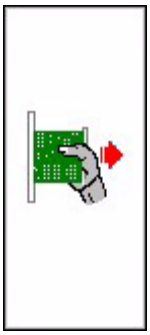
An active module is shown as a light blue panel:

Stand-by - The module is *not* currently selected to provide the reference signal to the Clock Modules or directly to the Timing Outputs.

A module in stand-by mode is shown as a light grey panel:



Not Equipped - The module is not physically present or has not been entered into the DCD inventory. A not equipped module is shown as a transparent panel with an illustration showing module removal:



Clock Modules (CLKs)

The DCD is normally equipped with two *Clock Modules* each fed from the *MRC Modules*. The clocks are illustrated as two panels to the right of the MRCs. There are several states associated with Clock Modules:

Active - The Clock Module is currently selected to provide the reference signal directly to the Timing Outputs. An active Clock Module is shown as a light blue panel.

Stand-by - The Clock Module is not currently selected to provide the reference signal to the Timing Outputs. A Clock Module in stand-by mode is shown as a light grey panel.

Not Available - The Clock Module is not physically present or has not been entered into the DCD inventory. A not equipped module is shown as a transparent panel with an illustration showing module removal.

Another important attribute associated with Clock Modules is their lock state. Each equipped Clock Module, whether active or in stand-by mode, has a small graphic of a padlock drawn towards the top left hand corner of the module panel. This padlock represents the lock state of Clock Module.

Clock Module locked

Clock Module unlocked (holdover, freerun or fast converge)

Timing Output Array (TO Array)

Towards the right of the graphic is a large panel labelled *TO Array*. This panel represents all the Timing Outputs (TO) in the DCD including the master and any expansion shelves. There are two states associated with the TO Array:

Active - The Timing Output Array is currently providing output timing signals. An active Timing Output Array is shown as a light blue panel.

Not Active - The Timing Output Array not is currently providing output timing signals. An non-active Timing Output Array is shown as a light grey panel.

DCD Internal Signal Distribution

As well as depicting the state of the functional blocks, the Overview page graphic (Figure 12 on page 51) also shows the active signal paths between the functional blocks.

Under normal conditions, and especially under fault conditions, it is important the user can identify the active signal path through the DCD element. All the significant signal paths between the functional blocks are shown on the user interface as grey pipes. Pipes providing the active signal path are shaded.

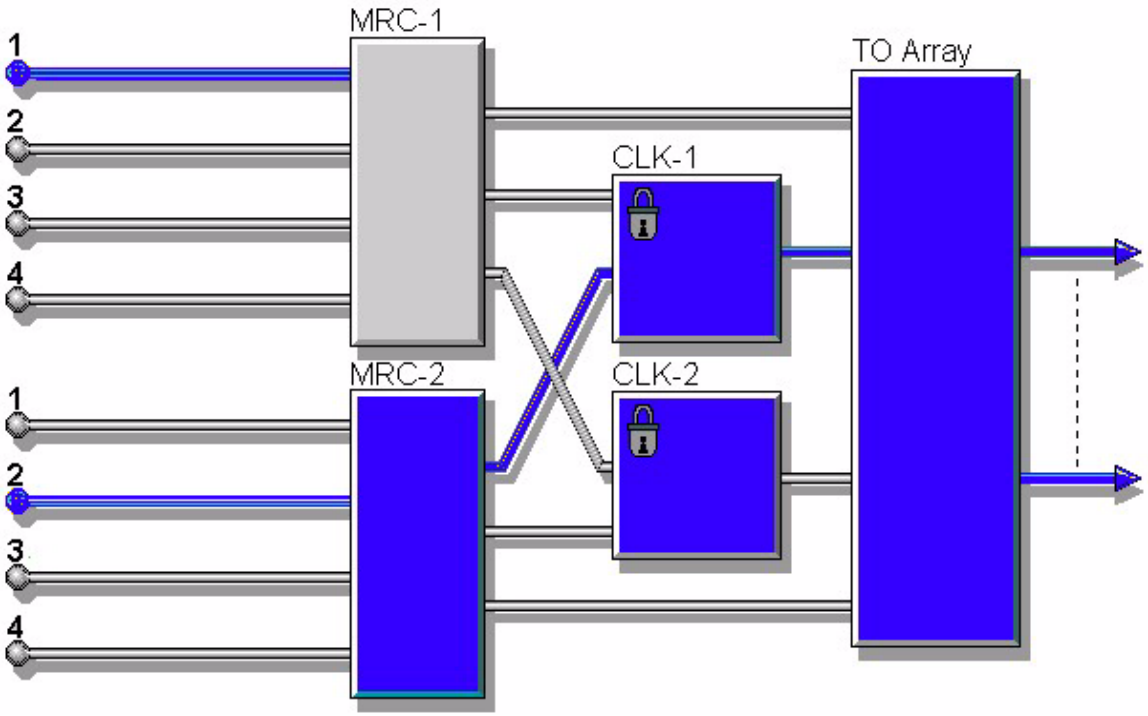


Figure 15 The Active Path Through A DCD Element (shaded)

The overall effect is demonstrated in the illustration above. The active signal path is:

MRC-2 input 2 → MRC-2 → CLK-1 → TO Array

Although input 1 of MRC-1 does not form part of the active path it is also depicted as active. This is simply to denote that if the MRC function were to switch from MRC-2 to MRC-1 then this input would instantly become part of the active path.

Now we have looked at interpreting the state of the DCD, we will now look at how to configure the synchronisation functionality of the DCD from the Overview page.

Configuring the DCD from the Overview

As we have seen the Overview page provides a graphical presentation of the current state of the DCD. However, it is capable of providing a means of configuring the synchronisation attributes of the DCD.

Configuring the synchronisation functionality of the DCD could not be easier. Simply place the mouse over the item you wish to configure and press the right mouse button! A pull-down menu will be provided which will list all the configuration actions appropriate to that item.

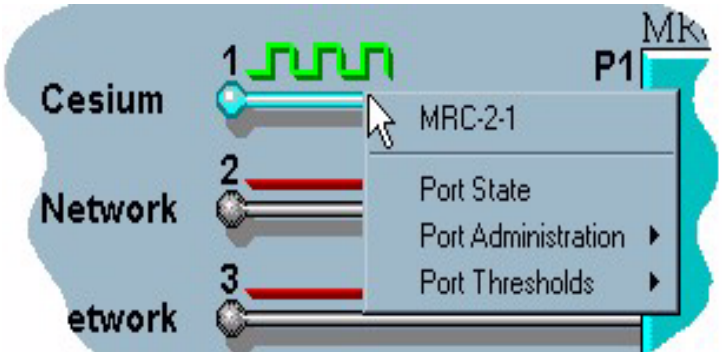


Figure 16 A Typical Pull-down Menu

Menu items followed by arrows denote that there is a sub-menu.

On selecting an action from a pull-down menu a dialogue window will appear. There are two basic types of dialogue window, Informational and Configuration Dialogue Windows.

Informational Dialogue Windows

Informational dialogues, as their name suggests, provide information only and do not perform configuration actions.

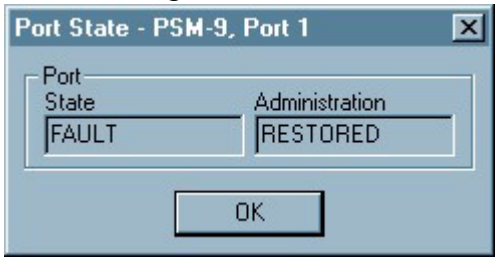


Figure 17 A Typical Informational Dialogue Window

The title bar of an informational dialogue identifies the subject of the information, in this case The Port State of MRC 2 port 1. The body of the window contains short informational text messages. The window can be closed by pressing the *OK* button or pressing the *Return* key.

Configuration Dialogue Windows

Configuration dialogue windows are more complex than the informational dialogues and provide controls to manipulate the configuration of the DCD.

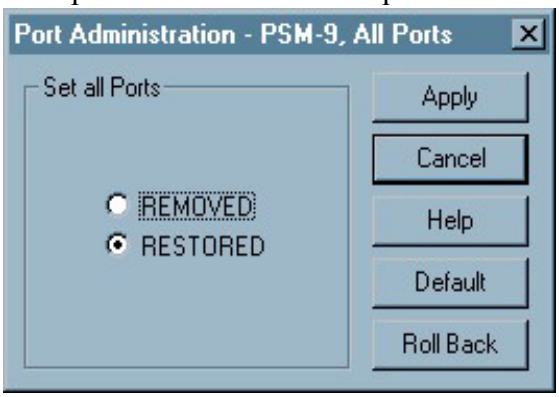


Figure 18 A Typical Configuration Dialogue Window

All Configuration Dialogues follow the same generic format and provide features designed to make configuration easier and safer.

Each configuration dialogue window is made up of an action area and five action buttons.

In general the action area portion of the window contains fields and controls which allow the user to read and modify the attributes which are the subject of the configuration dialogue. There are many different types of fields and controls.

To the right of the action area are five buttons:

Pressing the *Apply* button will cause modifications made to the configuration in the action area to be applied to the DCD. The *Apply* button can be pressed by selection with the mouse or with the Alt-A key combination.

As mentioned earlier the configuration mechanism has been designed to be as safe as possible, vastly reducing the likelihood of user error. Modifying the configuration of a DCD is not as simple as pressing the *Apply* button. By default, before a configuration modification is applied to the DCD the action must be confirmed.

Pressing the *Apply* Button from any configuration dialogue window will generate a confirmation window similar to that shown below:

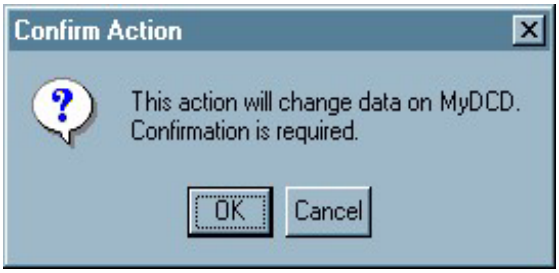


Figure 19 A Typical Confirmation Dialogue Box

If the action is mistaken then it can be cancelled by pressing the *Cancel* button.

The confirmation check can be disabled by un-checking *Confirm* in the *Options* menu, but this is not advised.

On completion of the action a dialogue will open which inform you of the outcome of the operation. If successful, the window shown in Figure 20 will be displayed.

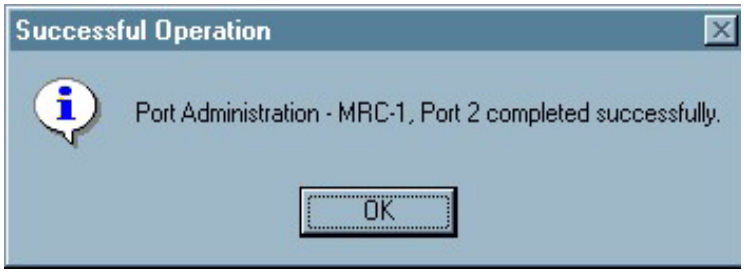


Figure 20 . The Configuration Successful Window

If unsuccessful, the window message will indicate this, and also give the nature of the action and the nature of the failure.

Once the conclusion of the action is acknowledged, access will be restored to the configuration items temporarily barred during the operation.

Back to the description of the configuration dialogue window components...

The *Cancel* button provides a way to quit out of a configuration dialogue window without modifying an attribute. On Cancelling, any un-applied attribute values set up within the action area will be discarded. This button is selected as default so that the window may be closed by simply pressing the return key.

The *Help* button will be shown in grey, inactive, signifying that this facility is not available in this release.

The *Default* button provides access to recommended default attribute values. On pressing the *Default* button, the default values will be displayed as if you had entered them. These values can be edited, applied or discarded.

Due to the nature of some configuration actions, default values may be inappropriate. In these cases the *Default* button legend will be shown in grey, inactive, signifying that this facility is not available.

The *Roll Back* button also provides a degree of security while performing configuration operations. It provides a mechanism to restore previously set attributes, similar to an undo feature.

On start-up, Configuration Manager retrieves all the current attributes of the DCD. These attributes are used to configure the views and populate the configuration dialogue windows. When an attribute is modified by the user, the previous value is not lost, rather it is maintained as the *roll back value*. The *Roll Back* button provides access to the roll back value.

It should be noted that roll back values are maintained only during the execution of Configuration Manager. If attributes are modified and Configuration Manager is shut-down, then the roll back values will be lost.

Due to the nature of some configuration actions, roll back values may be inappropriate. In these cases the *Roll Back* button legend will be shown in grey, inactive, signifying that this facility is not available.

The Shelf Pages

The other note book pages, shown initially behind the Overview page, provide more status and configuration access. Each page may be brought to the front by selecting its tab.

These pages are the *Shelf* pages. Each shelf of your DCD will have its own page. For a fully equipped DCD you may have five Shelf pages:

- Master - the Master Shelf.
- Exp1, Exp2, Exp3 - Expansion Shelves 1, 2 and 3.
- LPR - a Local Primary Reference Shelf.

You will notice that the tab of each shelf page has an *LED*. This provides an indication of the highest severity condition currently associated with that shelf.

It follows the standard colour convention:

- (Red) Critical Condition
- (Orange) Major Condition
- (Yellow) Minor Condition
- (Blue) Warning Condition
- (White) Indeterminate Condition
- (Green) No Condition

Figure 21 The Standard Alarm Colours

The Shelf pages differ from the Overview page in that, where the Overview depicts the conceptual state of the DCD, the Shelf pages depict the actual front panel appearance of the DCD.

The Shelf pages have been provided for those who are already familiar and comfortable with the front panel status indication of the DCD.

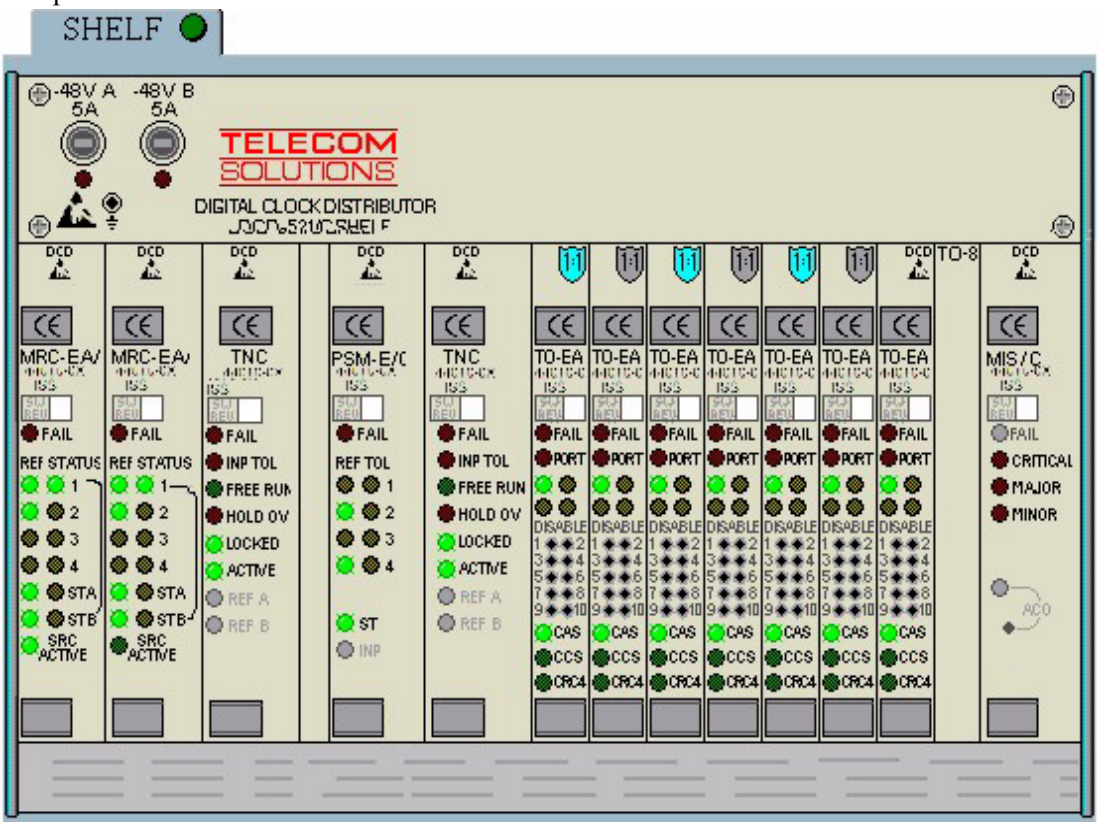


Figure 22 The Shelf Page

As you can see from the screen-shot above, the display is quite realistic. As with the Overview page, the status represented by the LEDs on the Shelf pages is maintained in real-time.

For instructions on interpreting the front panel indicators you should consult the appropriate Telecom Solutions Equipment Module Descriptions.

An attempt has been made to present as much information as possible on these pages, but unfortunately some LED states can not be derived from the management interface of the DCD. To avoid confusion these LEDs are depicted as grey.

As well as LED status the shelf pages also provide other status information.

Output Protection

If a protection scheme is activated on a Timing Output Module then the module is displayed with a shield denoting the protection scheme to which the module belongs to, i.e. 1:1, 1:N, 1+1. There are several states associated with protected Timing Output Modules:

Active - The Timing Output Module is currently selected to provide the reference signal. An active Timing Output Module is denoted by a light blue shield

Stand-by - The Timing Output Module is not currently selected to provide the reference signal. A Timing Output Module in stand-by mode is denoted by a light grey shield:

Protection Failure - The Timing Output Module is unable to function in the protection scheme due to a failure or mis-match with its protection partner modules. A Timing Output Module in Protection Failure mode is denoted by a red shield:

Removed (Disabled) Modules

If a module is removed (disabled) then the module will be shown as barred:

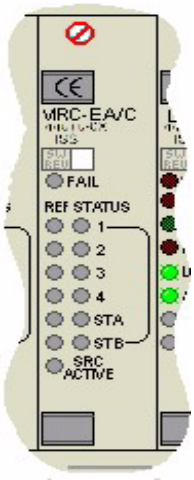


Figure 23 A Removed Module

All LEDs are shown grey as their states can not be derived.

Missing Modules

If a module is physically removed from the DCD shelf but is still provisioned within the DCD inventory then the module will be shown as missing.

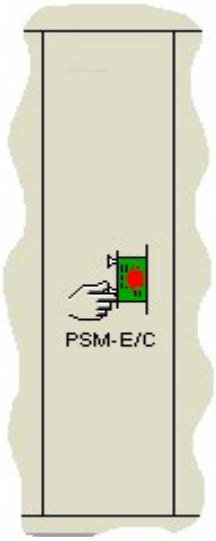


Figure 24 A Physically Missing (Non-Removed) Module

The graphic shows the type of module removed and acts as a reminder that another module can not be entered into the DCD inventory until this one is deleted.

Configuring the DCD from the Shelf Pages

As well as providing front panel status the Shelf pages also provide another method of configuring DCD attributes. Again configuration is via simple point and click actions.

By simply placing the mouse over the module, shelf or even empty slot you wish to configure, and pressing the right mouse button, a pull-down menu will be provided which will list all the configuration actions appropriate to that item.:

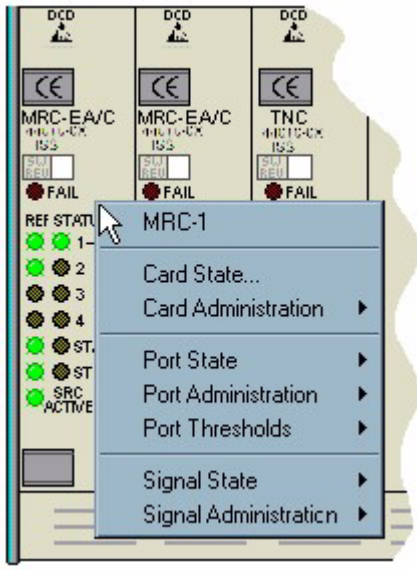


Figure 25 A Typical Pull-down Menu On The Shelf Page

These menus and resulting dialogue windows work in exactly the same manner as those produced by the Overview page.

TimeSource 3000/3100

There are two pages, the Overview page and the Shelf page. They are outlined below.

The Overview Page

The Overview page provides a simplified logical overview of TimeSource 3x00. The Overview page shows the received external inputs and the generated system outputs.

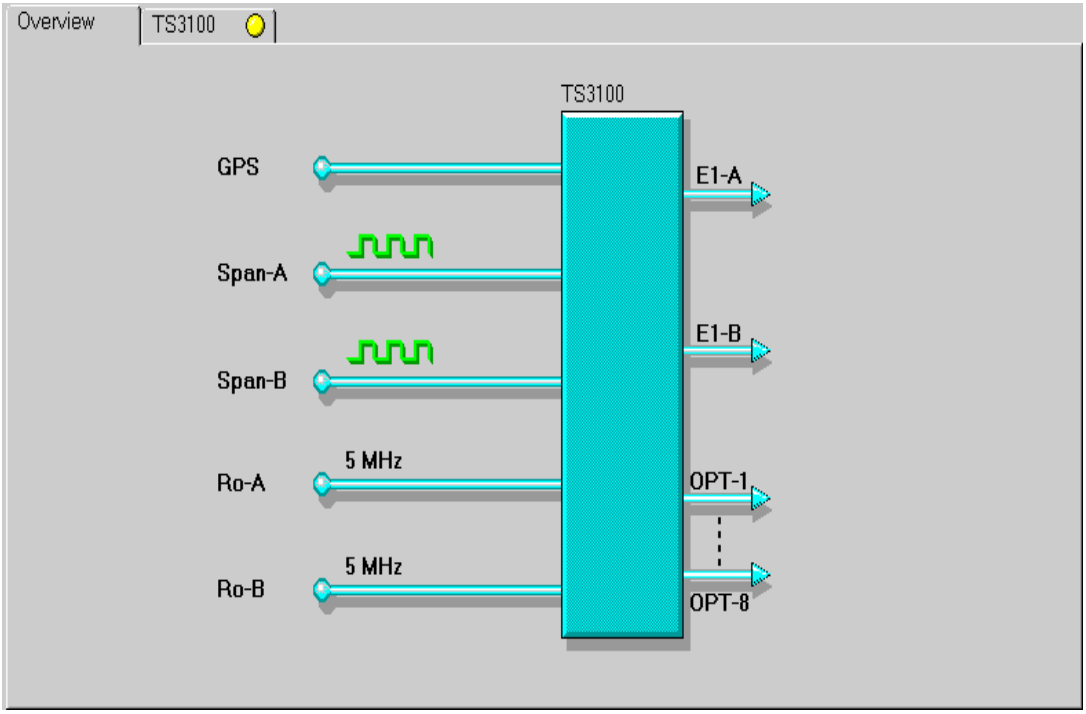


Figure 26 The TimeScan 3x00 Overview Page

The TimeSource 3x00 equipment is depicted as the main block, shown in blue in the illustration above. The main block will always remain blue because if the equipment becomes in-active then all communication will be lost with the unit.

The TimeSource 3x00 accepts five inputs. The equipment inputs are GPS, Span A, Span B, Remote Oscillator A, and Remote Oscillator B and are depicted by input pipes.

The TimeSource 3x00 provides two equipment outputs. In the case of the TimeSource 3000, the two outputs are of T1 type and in the case of the TimeSource 3100, the two outputs are of E1 type. The TimeSource 3x00 equipment may also have a daughter board providing eight optional outputs.

Interpreting The Overview

The main structure of the graphic is based upon the conceptual skeleton of TimeSource 3xxx.

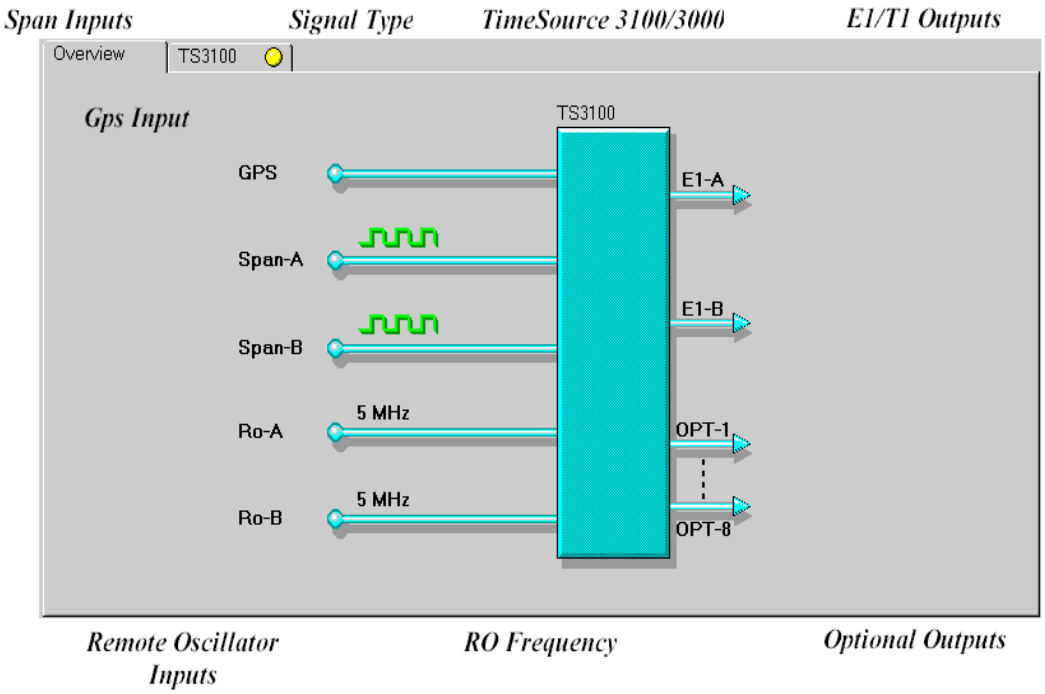


Figure 27 Conceptual Diagram Of A TimeSource 3xxx

Let's examine the graphics in more detail.

The TimeSource 3xxx equipment is depicted as the main block, shown in blue in the illustration above. The main block will always remain blue because if the equipment becomes in-active then all communication will be lost with the unit.

The TimeSource 3xxx accepts five inputs. The equipment inputs are GPS, Span A, Span B, Remote Oscillator A, and Remote Oscillator B and are depicted by input pipes, which will be discussed in

The TimeSource 3xxx provides two equipment outputs. In the case of the TimeSource 3000, the two outputs are of T1 type and in the case of the TimeSource 3100, the two outputs are of E1 type.

The TimeSource 3xxx equipment may also have a daughter board providing eight optional outputs.

Once the basic skeleton is understood, interpreting this page becomes much easier. As you can see, normally the skeleton is augmented with a range of graphics conveying information on equipment and activity, etc. The following sections will look at the areas we have just examined in some depth, and explain the significance of each graphic.

The external inputs can each show one of three states. They are as follows:

Provisioned and Ensembled -This is shown as a blue pipe:

Provisioned but Not Ensembled -This is shown as grey pipe:

Not Provisioned and Not Ensembled -This is shown as a grey pipe with a barring symbol:

Equipment Input Label

Each equipment input is labelled with an equipment label associated with it for ease of identification. Equipment labelling is relative to the five inputs and their various features. For example, the correct format is shown in the Overview section. The labels are as follows:

- GPS
- Span-A
- Span-B
- Ro-A
- Ro-B

Input Equipment Signals

The Span Inputs on the Overview Page depict the Signal Type as a wave form indicating the current type of the signal. There are several states associated with these signals:

Digital Signal Present and Satisfactory - There is currently a digital signal available at this Span input.

A digital signal in this state is shown as a train of green square waves:

Analogue Signal Present and Satisfactory - There is currently a analogue signal available at this Span input

An analogue signal in this state is shown as a train of green sinusoidal waves:

No Signal Present - There is currently no reference signal available at this equipment input.

A signal in this state is shown as a flat red line.

TS3100 / TS3000 - the Master Shelf

You will notice that the tab of the shelf page has an LED. This provides an indication of the highest severity condition currently associated with the TimeSource 3xxx unit. The shelf tab LEDs follow the standard colour convention:

Figure 28 The Standard Alarm Colours

The TimeSource Shelf page differs from the Overview page in that, where the Overview depicts the conceptual state, the Shelf page depicts the actual front panel appearance of the TimeSource 3000 or TimeSource 3100.

The Shelf page has been provided for those who are already familiar and comfortable with the front panel status indication of the TimeSource unit.

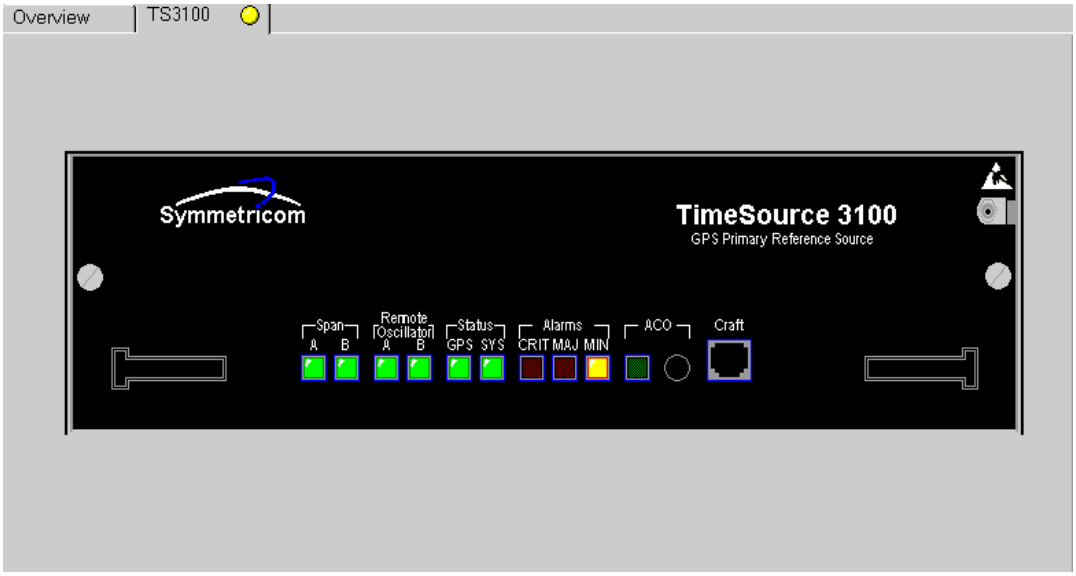


Figure 29 The Shelf Page

As you can see from the screen-shot above, the display is quite realistic. As with the Overview page, the status represented by the LEDs on the Shelf pages is maintained in real-time.

For instructions on interpreting the front panel indicators you should consult the appropriate Telecom Solutions Equipment Module Descriptions.

An attempt has been made to present as much information as possible on these pages.

As well as LED status the shelf pages also provide other status information.

The shelf page provides full configuration access. Configuration is via simple point and click actions.

Place the mouse over the LED representing the equipment that you wish to configure, and press the right mouse button. A menu will appear, listing all the configuration actions which are appropriate to that equipment. The following diagram illustrates a user that has selected Span-A.

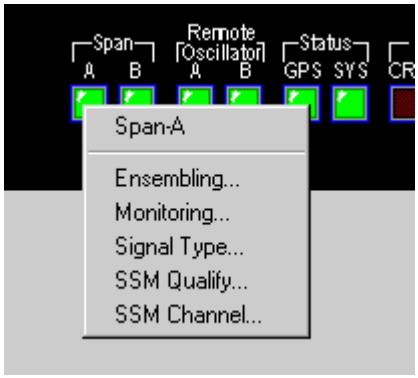


Figure 30 An Example LED Menu

When you place the mouse over any part of the Shelf page which does not show an LED, when you right click, the following menu will be displayed:

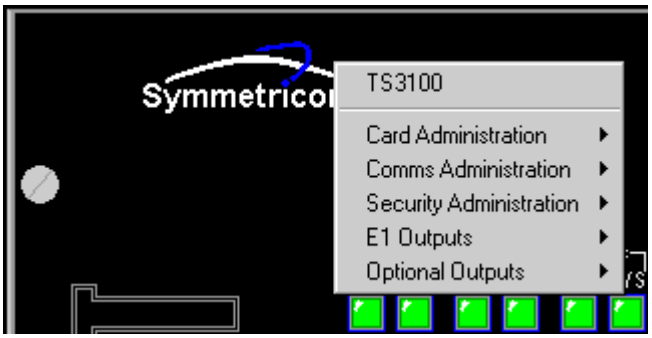


Figure 31 The Non-LED Menu

n.b. The menus provided are context sensitive, that is, the menu shown depends on where you right click. If you do not see the menu options that you expect, check that you have clicked in the correct place.

E1 Synchronous Clock Insertion Unit (ESCIU) Option Board

If a TimeSource 3100 is equipped with an ESCIU option board, the Shelf and Overview pages will display information about the status of the ESCIU

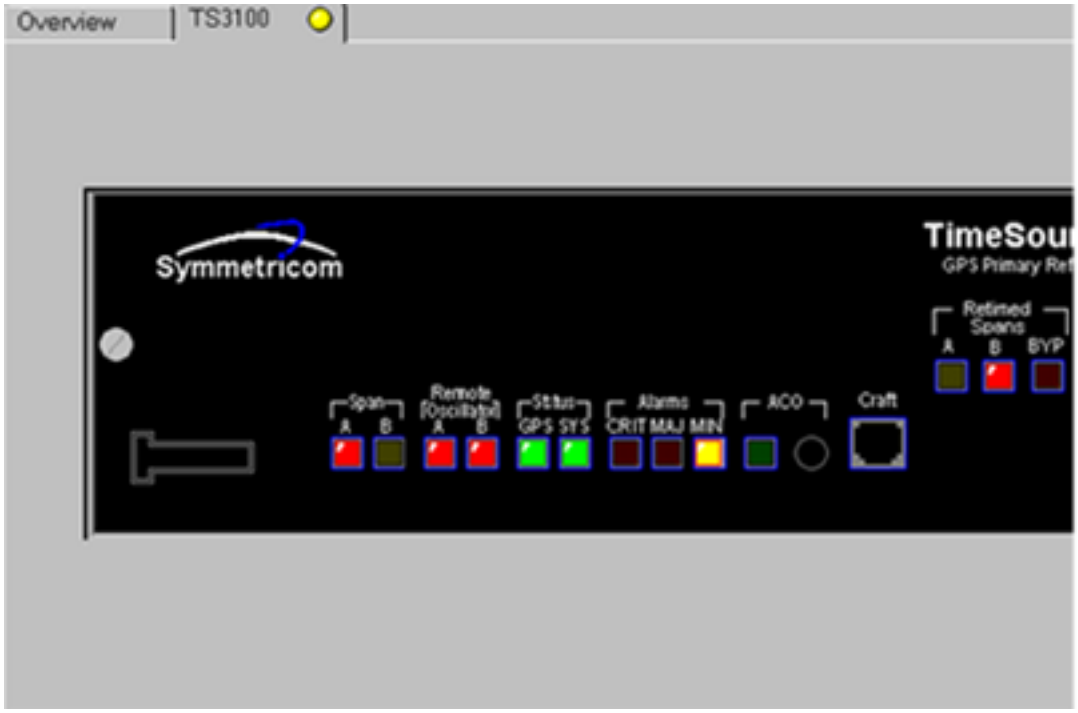


Figure 32 TimeSource 3100 with ESCIU - Shelf Page (detail)

As you can see from the screen shot above, the shelf page now displays an additional 3 LEDs - Retimed Span-A, Retimed Span-B and BYP (Bypass). As with the other LEDs on the Shelf page, they are maintained in real-time and support context sensitive menus.

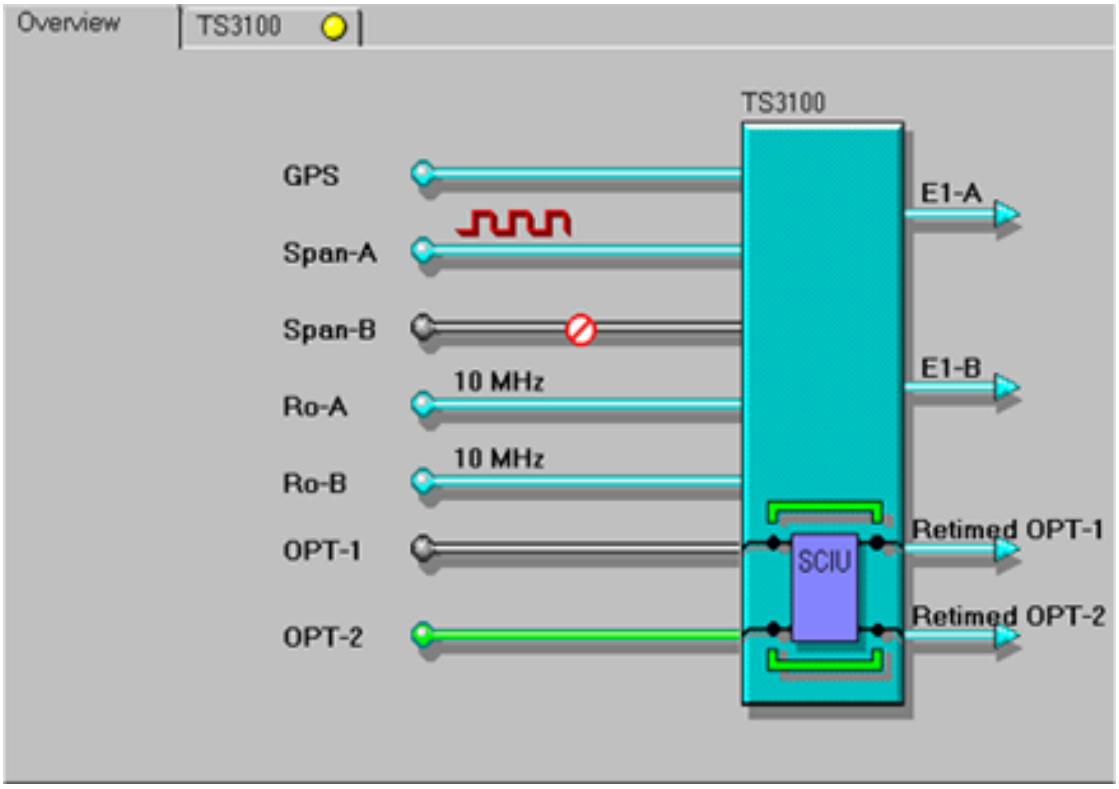


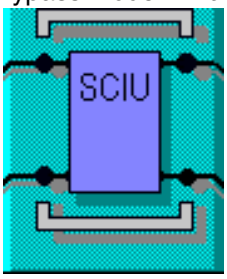
Figure 33 TimeSource 3100 with ESCIU - Overview Page

As you can see from the screen shot above, the Overview page now depicts the ESCIU inputs ("OPT-1" and "OPT-2") together with it's outputs ("Retimed OPT-1" and "Retimed OPT-2").

The ESCIU status will be depicted on the Overview page with one of the following graphical indicators:

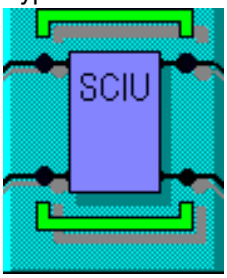
The ESCIU has been configured so that Bypass Mode is inhibited. The bypass relays are depicted as a pair of grey pipes and have not been operated.

Figure 34 Bypass Mode Inhibited (detail)



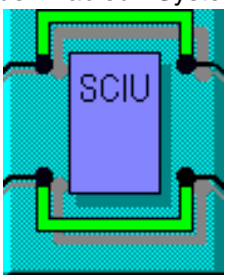
The ESCIU has been configured so that, when the system is in holdover, input signals will bypass the board. The bypass relays are depicted as a pair of green pipes, providing a potential path around the ESCIU for the input signals. The system is not in holdover and, therefore, the bypass relays have not been operated.

Figure 35 Bypass Mode Enabled (detail)



The ESCIU has been configured so that, when the system is in holdover, input signals will bypass the board. The bypass relays are depicted as green pipes providing a path for the input signals around the ESCIU. The system is in holdover and, consequently, the bypass relays have been operated.

Figure 36 Bypass Mode Enabled - System in Holdover (detail)



The TimeSource 3x00 Menus

The following menus items are available from both TimeSource 3000 pages:

Window

Exit- exits the application.

Options

Confirm- this item toggles on and off the option which displays a confirmation dialogue box when the changes to the database are requested.

Help

Help- this item brings up the online version of this help

About- this item displays a dialogue box with information about this application.

Confirmation Dialogue Boxes

When you follow the instructions in the *How To* section (below), you may be presented with Confirmation dialogue boxes. These work in exactly the same way as those for the generic Configuration Manager, as outlined on page 76.

How To...

The following sections describe how to use the Configuration Manager to perform some common activities:

Entering Equipment Modules into a Shelf....83
Deleting Equipment Modules from a Shelf....84
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Entering Equipment Modules into a Shelf

Before you can configure or monitor equipment in a DCD you must first enter the module into the DCD inventory.

To enter equipment modules:

- Ensure slot is shown as empty on the appropriate Shelf page. If not then you must delete the existing module before you can enter a new one.
- Physically place the module into the slot.
- Select the responding empty slot on the appropriate Shelf page. A list of all the modules which may be inserted into that slot will be produced. Simply select correct module from the list
- Follow the dialogue instructions and your new module will be automatically entered and will appear in the shelf.

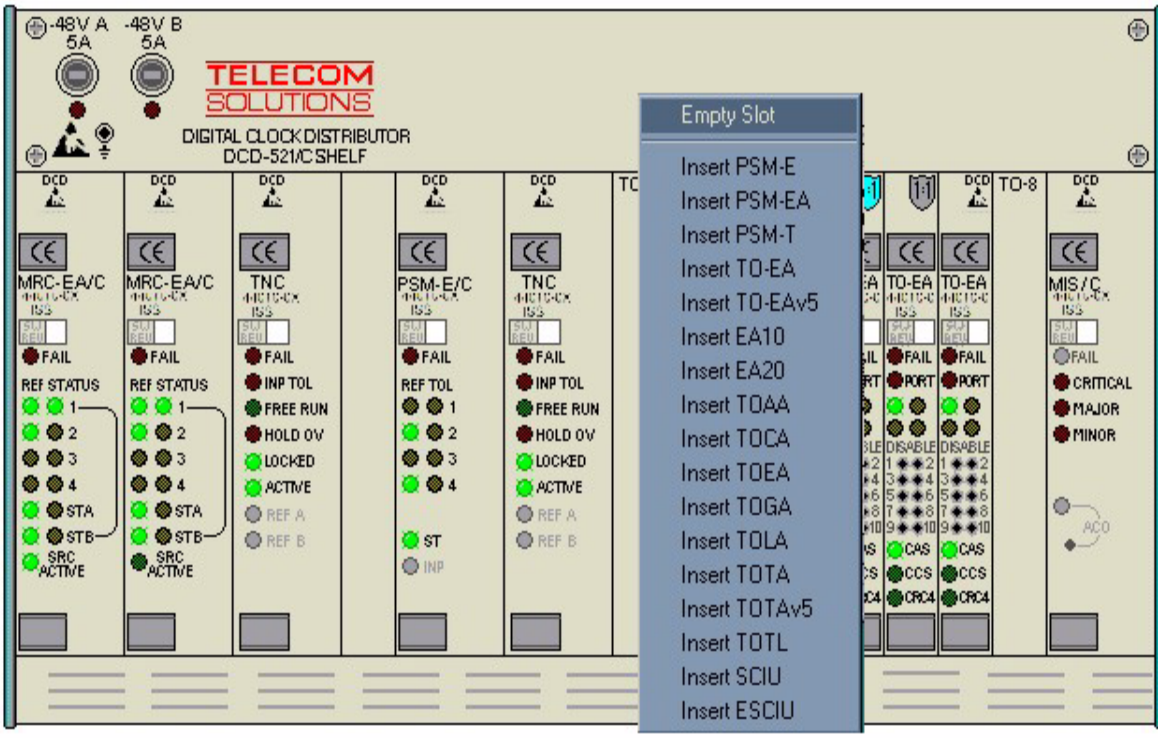

Figure 37 A Module List On The Shelf Page

If the module does not appear in the list then you are attempting to insert the module in an incorrect slot.

Deleting Equipment Modules from a Shelf

In order correctly physically remove equipment modules from a shelf the module must be deleted from the DCD inventory. It is only possible to delete modules that are have first had their ports removed (disabled), the module removed (disabled) and finally their ports deleted.

To delete equipment modules:

- Select the appropriate shelf page.
- Select the appropriate equipment module.
- Choose the *Card Administration* menu item.
- From the resultant sub-menu choose the *Delete* menu item.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been accepted. If successful the card graphic will disappear.

On entering equipment modules into the DCD inventory, some modules will default to a removed (disabled) state. This is denoted by a barring symbol on the top of the module.

Removing or restoring equipment modules

- Select the appropriate shelf page. Select the appropriate equipment module.
- Choose the *Card Administration* menu item.
- From the resultant sub-menu choose the *Remove/Restore* menu item.
- A dialogue box will be opened. The button highlights represents the current value adopted by the DCD. Selection of another state may be made selecting alternative button.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been accepted.

Reading Card Versions

All Cards contain an Inventory that holds:

Part Number, CLEI, Serial Number, Hardware Revision, Software Revision, Software Version.

To open this dialogue:

- Choose the *Card Administration* menu item.
- Choose the *Version* menu item.

MIS modules, however, contain the following:

Part Number, CLEI, Serial Number, Hardware Revision
State, Software Revision, Software Version (High Bank)
State, Software Revision, Software Version (Low Bank)

To open this dialogue:

- Choose the *Version* menu item.

Saving/Loading Configurations

To read all data from the cards to the MIS module

- Select *Read All Data from Card*s

To write all data from the MIS module to the cards

- Select *Write All Data to Cards*

To read all data from the MIS module to the cards

- Select *Card Administration*
- Select *Read Data from MIS*

To write all data from the cards to the MIS module

- Select *Card Administration*
- Select *Write Data to MIS*

Removing/ Restoring Input Ports

TimeScan supports many types of input reference modules. The MRC-EA and MRC-T input reference modules provide a facility where their inputs can be removed (disabled) or restored (enabled) remotely.

To remove or restore input ports:

From the Overview page:

- Select the appropriate port *pipe*.
- Choose the *Port Administration* menu item.
- From the resultant sub-menu choose the *Remove/Restore* menu item....

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Port Administration* menu item.
- From the resultant sub-menu choose the *Remove/Restore* menu item.
- From the resultant sub-menu choose the appropriate port or all ports...

...

- A dialogue box will be opened. The button highlights represents the current value adopted by the DCD. Selection of another state may be made selecting alternative button.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been accepted.

Reading / Setting the Priority of an Input Port

Multi reference controllers (MRCs) support the prioritizing of input ports. The input with the highest priority (1) will be selected as the reference source to its MRC provided, that reference is deemed to be fit for use. If the priority (1) reference is lost or is deemed not fit for use then the MRC will automatically select the next suitable input in order of priority 2-3-4.

n.b. DCIM card allow different input ports to have the same priority

To read / set the priority of an input port:

From the Overview page:

- Select the appropriate port *pipe*.
- Choose the *Port Administration* menu item.
- From the resultant sub-menu choose the *Priority* menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Port Administratio*n menu item.
- From the resultant sub-menu choose the *Priority* menu item.
- From the resultant sub-menu choose the appropriate port or all ports.

...

- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made using the spin control.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new priority has been accepted.

It should be noted that setting a new selection priority on a given port may cause the selection priority of the other inputs to be modified by the MRC. This priority re-ordering may take several seconds.

Reading / Setting the Identity of an Input Port

TimeScan supports a port identity field for all ports of the input reference modules (MRC or CI). The port identity is a text string which is intended to be used to uniquely identify the port.

To read / set the identity of an input port:

From the Overview page:

- Select the appropriate port *pipe*.
- Choose the *Port Administration* menu item.
- From the resultant sub-menu choose the *Identity* menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Port Administration* menu item.
- Form the resultant sub-menu choose the *Identity* menu item.
- Form the resultant sub-menu choose the appropriate port *or* all ports for an MRC.

...

- A dialogue box will be generated providing an edit box containing the current port identity. Note: if the identity has not been set the word *UNSET* will appear.
  The port identity may contain up to fifty printable characters. No composition rules are imposed on this attribute, it is free text, so it can follow any naming convention adopted by the Network Administration.

  The port identity may be edited by using the conventional line editing facilities:
  Left/right arrow keys.
  Backspace.
  Forward delete.
  Shift left/right arrow to highlight text.
  Control-x to delete highlighted text.
  Control-c to copy highlighted text.
  Control-v to paste.
  Control-z to undo last edit action.

- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new port identity has been accepted.

Reading / Setting the Source of an Input Signal

n.b. This section (Reading / Setting the Source of an Input Signal) does not apply to DCIM cards.

Each reference input port has an attribute, *source*, associated with it. This attribute defines the source of the synchronisation reference signal applied to that port and dictates the qualification threshold applied to the reference signal.

Source may take one of four values:

Network
GPS
LORAN
Cesium

To read / set the source of an input signal:

From the Overview page:

- Select the appropriate signal wave form.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Source* menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Source* menu item.
- From the resultant sub-menu choose the appropriate port *or* all ports for an MRC.

...

- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new signal source has been accepted.

Reading / Setting the Type of Input Signal

TimeScan supports many types of input reference modules. The MRC-EA input reference modules provide a facility where the type of signal, digital or analogue, accepted by its ports may be controlled remotely.

To read / set the type of input signal:

From the Overview page:

- Select the appropriate signal wave form.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the 'Type' menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Type* menu item.
- From the resultant sub-menu choose the appropriate port or all ports.

...

- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new signal type has been accepted.

Reading / Setting the Framing Mode of an Input Signal

TimeScan supports many types of input reference modules. The MRC-EA and MRC-T input reference modules provide a facility where the framing mode, accepted by their ports may be controlled remotely.

To read / set the framing mode of an input signal:

From the Overview page:

- Select the appropriate signal wave form.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Framing* menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Framing* menu item.
- From the resultant sub-menu choose the appropriate port *or* all ports.

...

- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new signal framing mode has been accepted.

Reading / Setting the Origin of an Input Signal

TimeScan supports a signal origin field for all ports of the input reference modules (MRC or CI). The signal origin is a text string which is intended to be used to uniquely identify the path or source of the reference signal.

If used properly this attribute can be extremely useful. For example, if the signal applied to an input port is lost due to a bearer cut or the failure of the up-stream source then it may be necessary to quickly identify the bearer or source. To do this manually by attempting to trace through the Network Connection Plan may be very time consuming. However, if the signal origin is already defined then you need only select this facility.

To read / set the origin of an input signal:

From the Overview page:

- Select the appropriate signal wave form.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Origin* menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Signal Administration* menu item.
- Form the resultant sub-menu choose the *Origin* menu item.
- Form the resultant sub-menu choose the appropriate port.

...

- A dialogue box will be generated providing an edit box containing the current signal origin. Note: if the origin has not been set the word *UNSET* will appear.
  The signal origin may contain up to fifty printable characters. No composition rules are imposed on this attribute, it is free text, so it can follow any naming convention adopted by the Network Administration.

  The origin may be edited by using the conventional line editing facilities:
  Left/right arrow keys.
  Backspace.
  Forward delete.
  Shift left/right arrow to highlight text.
  Control-x to delete highlighted text.
  Control-c to copy highlighted text.
  Control-v to paste.
  Control-z to undo last edit action.

- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new origin has been accepted.

Reading/ Setting the Identity of an Output Port

TimeScan supports a port identity field for all ports of the Timing Output (TO) modules. The port identity is a text string which is intended to be used to uniquely identify the port.

To read / set the identity of an output port:

- Select the appropriate shelf page.
- Select the appropriate TO module.
- Choose the *Port Administration* menu item.
- From the resultant sub-menu choose the *Identity* menu item.
- From the resultant sub-menu choose the appropriate port or all ports.
- A dialogue box will be generated providing an edit box containing the current port identity. Note: if the identity has not been set the word *UNSET* will appear.
  The port identity may contain up to fifty printable characters. No composition rules are imposed on this attribute, it is free text, so it can follow any naming convention adopted by the Network Administration.

  The port identity may be edited by using the conventional line editing facilities:
  Left/right arrow keys.
  Backspace.
  Forward delete.
  Shift left/right arrow to highlight text.
  Control-x to delete highlighted text.
  Control-c to copy highlighted text.
  Control-v to paste.
  Control-z to undo last edit action.

- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new port identity has been accepted.

Reading / Setting the Type of Oscillator

MRC modules can have different types of Oscillators, Rubidium and Quartz. To set the type

- Select *Card Administration*
- Select *Oscillator Types*'

Reading / Setting the Type of Output Signal

TimeScan supports many types of Timing Output modules. The TO-EA modules provides a facility where the type of signal, digital or analogue, generated by its ports may be controlled remotely.

To read / set the type of output signal:

- Select the appropriate shelf page.
- Select the appropriate TO module.
- Choose the *Signal Type* menu item.
- From the resultant sub-menu choose the *Type* menu item.
- From the resultant sub-menu choose the appropriate port or all ports.
- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new signal type has been accepted.

Reading / Setting the Protection Mode of a Timing Output Module

TimeScan supports many types of Timing Output modules. The TO-EA modules provides a facility where the protection mode employed for its output signals may be controlled remotely.

To read / set the protection mode of a Timing Output module:

- Select the appropriate shelf page.
- Select the appropriate TO module.
- Choose the *Card Administration* menu item.
- From the resultant sub-menu choose the *Protection Type* menu item.
- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new protection mode has been accepted.

Reading / Setting the Framing Mode of a Timing Output Module

TimeScan supports many types of Timing Output modules. The TO-EA modules provides a facility where the framing mode employed for its output signals may be controlled remotely.

To read / set the framing mode of a Timing Output module:

- Select the appropriate shelf page.
- Select the appropriate TO module.
- Choose the *Card Administration* menu item.
- From the resultant sub-menu choose the *Framing* menu item.
- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new signal framing mode has been accepted.

Reading / Setting the Destination of an Output Signal

TimeScan supports a signal destination field for all ports of the Timing Output modules. The signal destination is a text string which is intended to be used to uniquely identify the path or down-stream target of the output signal.

To read / set the destination of an output signal:

- Select the appropriate shelf page.
- Select the appropriate TO module.
- Choose the *Signal Destination* menu item.
- Form the resultant sub-menu choose the appropriate port or all ports.
- A dialogue box will be generated providing an edit box containing the current signal destination. Note: if the destination has not been set the word *UNSET* will appear.
  The signal destination may contain up to fifty printable characters. No composition rules are imposed on this attribute, it is free text, so it can follow any naming convention adopted by the Network Administration.

  The destination may be edited by using the conventional line editing facilities:
  Left/right arrow keys.
  Backspace.
  Forward delete.
  Shift left/right arrow to highlight text.
  Control-x to delete highlighted text.
  Control-c to copy highlighted text.
  Control-v to paste.
  Control-z to undo last edit action.

- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new destination has been accepted.

Reading/ Setting the Real Time Clock of the DCD

The Master Shelf MIS module maintains the real time clock for the entire DCD.

To read / set the DCD real time:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *Time* menu item.
- A dialogue box will be opened providing a snap shot of the real time current measured by the DCD.
- All fields may be edited directly or by using the spin controls.
- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new time setting has been accepted.

Reading the Current Alarm State of a Shelf

The MIS module of each shelf an Alarm List which lists all the current alarm conditions outstanding on that shelf.

To view an Alarm List:

- Select the appropriate Shelf page.
- Select the *MIS* menu.
- Choose the *Alarm List* menu item.
- An information dialogue box will be opened listing the contents of the Alarm List.

Reading the Alarm History of the DCD

The Master shelf MIS provides an Alarm History for the entire DCD in the form of a log.

To view the log:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *Alarm Log* menu item.
- An information dialogue box will be opened listing the contents of the *Alarm Log*.

Clearing the Alarm History of the DCD

The Master shelf MIS provides an Alarm History for the entire DCD in the form of a log.

To clear the Alarm History:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *Clear Log* menu item.
- Confirm action if required.
- A result dialogue box will inform you of the result.

Operating the Alarm Cutoff

This dialogue enables you to silence all local audible alarms on the DCD.

To operate the Alarm Cutoff:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *Operate Alarm Cutoff* menu item.
- Confirm action if required.
- A result dialogue box will inform you whether alarm cutoff as operated.

Setting the System Identifier (SID) of the DCD

The Master shelf MIS provides an identifying string known as the System Identifier (SID). This string forms the basis of the header for all command responses and notifications generated by the DCD.

To read or set the SID:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *System Identifier* menu item.
- A dialogue box will be generated providing an edit box containing the current System Identifier. The SID may be edited by using the conventional line editing facilities:
  Left/right arrow keys.
  Backspace.
  Forward delete.
  Shift left/right arrow to highlight text.
  Control-x to delete highlighted text.
  Control-c to copy highlighted text.
  Control-v to paste.
  Control-z to undo last edit action.
- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new SID has been accepted.

Note a quick method of viewing the System Identity is to invoke the Master shelf menu by clicking on the top panel of the shelf. The resulting menu will display the System Identifier has its title.

Reading / Setting the Communication Parameters of the DCD

The MIS module of the DCD Master shelf provides three serial communication ports for management facilities. Each communication port has a host of configurable attributes which control its behaviour.

To read or set communication parameters of the DCD:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *Communications* menu item.
- From the sub-menu select the communication port you wish to modify.
- A dialogue box will be generated providing a control for each attribute of that port. The values displayed in the controls are the current attribute settings.

The following list provides a brief description of each attribute:

Baud Rate - This is the data transfer rate of the port. Two values may be selected form the drop list 9600 / 1200. It should be noted that if the baud rate of the port currently used by TimeScan is changed then TimeScan should be closed. The baud rate set in the Shortcut window should be modified accordingly and the Tool Palette re-launched. It is not possible to modify the baud rate of communication port 2.

Monitor - This check box controls the ability of the port to monitor the activity on other ports. It should be noted that Monitor must be turned off, un-checked, for the port currently used by TimeScan.

Keep Alive - This check box controls the ability of the port to send spontaneous messages.

Com Type - Each communication port supports four communication types:

X.25- for direct connection to an X.25 PAD.
Modem- for direct connection to a PSTN modem.
Terminal- for direct connection to a Terminal.
Remote- for direct connection to a remote expansion shelf.

It should be noted that Com Type must be set to *Term*, for the port currently used by TimeScan.

End of Text - This attribute represents the numeric value of the ASCII character to be used as an additional terminating character. Zero indicates no additional terminating character. It should be noted that End of Text must be set to zero, ‘00’, for the port currently used by TimeScan.

Echo - This check box controls the ability of the port to echo received characters. It is recommended that Echo should be turned off, un-checked, for the port currently used by TimeScan.

Report Alarms - This check box controls the ability of the port to send spontaneous alarm messages. It is recommended that Report Alarms should be turned on, checked, for the port currently used by TimeScan.

Hardware flow control - This check box controls whether the port uses hardware flow control.

Software flow control - This check box controls whether the port uses software flow control.

Back to the procedure:

- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your modifications have been successful made.

Note: All modifications on communication port 2 will result in a partially executed response due to the inability to set the baud rate of this port.

Re-initializing an MIS module

It is possible to re-initialize the software of an MIS module. This action may be necessary on installation and does not affect the synchronisation performance of the shelf or DCD.

To re-initialize an MIS module:

- Select the Shelf page of the MIS to be re-initialized.
- Select the *MIS* menu.
- Choose the *Re-initialize...* menu item.
- A dialogue box will be generated providing a warning.
- If you intend to proceed, select *Apply*.
- Confirm action if required.
- Configuration Manager will send the appropriate commands and provide a dialogue with the result of the re-initialisation. If successful the MIS module will restart. All communications with the MIS will cease for approximately thirty seconds. At this point TimeScan **must** be closed and restarted. Close the Configuration Manager, any other TimeScan tools and finally the Tool Palette.

Adding, Amending and Deleting User Security

The MIS card supports up to 17 Users in its security features. The range of features available to individual Users depends upon their Access Level. The DCD determines what access level allows what feature.

Adding a User:

- Select the *MIS* menu
- Choose the *Security*, *Add User...* menu items.
- A dialogue box will be generated. Enter the required *User Name*, *Password* and *Security Level*.
- If you intend to proceed, select *Apply*.
- Confirm action if required.

Editing a User:

- Select the *MIS* menu
- Choose the *Security, Edit Users...* menu items.
- A dialogue box will be generated. Listing the Current User *ID*s as well as box to hold the new user *ID*s, *Password*s and *Security Level*s. This dialogue will also allow you to enter a new user
- If you intend to proceed, select *Apply*.
- Confirm action if required.

Deleting a User:

- Select the *MIS* menu
- Choose the *Security*, *Delete User.*' menu items.
- A dialogue box will be generated. Enter the *User Name* for the User you wish to delete.
- If you intend to proceed, select *Apply*.
- Confirm action if required.

Changing SSM Support

n.b. This section (Changing SSM Support) only applies to MIS Version 5.04 and above.

- Select the *MIS* menu.
- Choose the *Select SSM* support item.
- A dialogue box will be generated. Choose the type of SSM support which you require.
- Press *Apply* to keep your changes or *Cancel* to close the box without keeping the changes.

Reading the Satellite Statistics from a GTI module

To read the satellite statistics from a GTI module:

- Select the LPR Shelf page.
- Select the appropriate GTI menu.
- Choose the *GPS Stats* menu item.
- An information dialogue box will be opened listing GPS statistics including a snap shot of UTC time, location, satellites in view and their co-ordinates.

TimeSource 3x00- Ensemble / Unensemble a Span

To ensemble or unensemble as span, go to the TimeSource 3000 shelf page and:

- Right click on a span LED on the shelf page.
- Select the *Ensembling*. menu item to bring up the Ensembling dialogue box.
- Click on the *Allow* button to enable ensembling, or the *Inhibit* button to disable it.
- Click *Apply* to close the box and save your changes.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Read / Set Remote Oscillator (RO) Frequency for a Clock

To read or set the frequency of the remote oscillators:

From the Overview Page

- Right click anywhere on the blue block representing the main Time Source 3xxx equipment.
- See Steps below...

From the Shelf Page

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one of the LEDs.
- See Steps below...

...Steps

- Select *Card Administration from the popup menu. (This will display another set of choices)*
- Select RO Frequency... from the drop down menu. (This will display the Remote Oscillator Frequency dialogue box)
- Select a frequency from the values in the drop down list box. The options are either 5 or 10 MHz .
- Click Apply to close the box and save changes, or Cancel to just close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

N.B. Since both oscillators must be set to the same value, they are set simultaneously.

TimeSource 3xxx - Read / Set the System Date and Time

To read or set the system date and time:

From the Overview Page

- Right click anywhere on the blue block representing the main Time Source 3xxx equipment.
- See Steps below...

From the Shelf Page

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select *Card Administration from the popup menu. (This will display another set of choices)*
- Select Time... from the drop down menu. (This will display the Time dialogue box)
- Enter the required values by typing directly into each time field, or use the spin arrows on the side of each field to enter the values.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

Initialise a TimeSource 3xxx Card

To reset the TimeSource 3xxx card to its default values:

From the Overview Page

- Right click anywhere on the blue block representing the main Time Source 3xxx equipment.
- See Steps below...

From the Shelf Page

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select *Card Administration from the popup menu. (This will display another set of choices)*
- Select Initialise Card... from the drop down menu.
- Confirm action if required.
- There may be a long delay during the initialisation. The TS3xxx will be reconnected after initialisation is complete.

Read TimeSource 3xxx Version Details

To retrieve the version details of the TimeSource 3xxx card:

From the Overview Page

- Right click anywhere on the blue block representing the main Time Source 3xxx equipment.
- See Steps below...

From the Shelf Page

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select *Card Administration from the popup menu. (This will display another set of choices)*
- Select Version... from the drop down menu. (This will display the version details dialogue box)
- Select OK to close the window.

TimeSource 3xxx - Read / Set Cable Delay for the Global Positioning System (GPS)

To read or set the cable delay for the Global Positioning System:

From the Overview Page

- Right click on the GPS equipment input located next to the GPS text label.
- See Steps below...

From the Shelf Page

- Right click on the GPS LED or the GPS text just above the LED.
- See Steps below...

...Steps

- Select *Antenna Administration from the popup menu. (This will display another set of choices)*
- Select Cable Delay... from the drop down menu. (This will display the Antenna Cable Delay dialogue box)
- Enter the required value by typing directly into the field, or use the spin arrows on the side of the field to enter the value.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

N.B. The range of the Cable Delay is 0-330 and measured in metres.

TimeSource 3xxx - Read / Set Elevation Mask for the Global Positioning System (GPS)

To read or set the elevation mask angle for the Global Positioning System:

From the Overview Page

- Right click on the GPS equipment input located next to the GPS text label.
- See Steps below...

From the Shelf Page

- Right click on the GPS LED or the GPS text just above the LED.
- See Steps below...

...Steps

- Select *Antenna Administration from the popup menu. (This will display another set of choices)*
- Select Elevation Mask... from the drop down menu. (This will display the Elevation Mask dialogue box)
- Enter the required value by typing directly into the field, or use the spin arrows on the side of the field to enter the value.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

N.B. The range of the Elevation Mask is 0-45 and measured in degrees.

TimeSource 3xxx - Read the Global Positioning System (GPS) Statistics

To read the Global Positioning System satellite statistics:

From the Overview Page

- Right click on the GPS equipment input located next to the GPS text label.
- See Steps below...

From the Shelf Page

- Right click on the GPS LED or the GPS text just above the LED.
- See Steps below...

...Steps

- Select *Antenna Administration from the popup menu. (This will display another set of choices)*
- Select Statistics.... (This will display the Statistics dialogue box)
- Select OK to close the window.

TimeSource 3xxx - Initialise the Global Positioning System (GPS)

To initialise the Global Positioning System:

From the Overview Page

- Right click on the GPS equipment input located next to the GPS text label.
- See Steps below...

From the Shelf Page

- Right click on the GPS LED or the GPS text just above the LED.
- See Steps below...

...Steps

- Select *Antenna Administration from the popup menu. (This will display another set of choices)*
- Select Initialise GPS.... (This will display the Initialise GPS dialogue box)
- Select either the Reset Receiver or Reset Entire Database.
- Click Apply to begin the initialisation, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Ensemble / Un-ensemble a Remote Oscillator (RO)

To ensemble or un-ensemble a Remote Oscillator:

From the Overview Page

- Right click on either the Remote Oscillator A or Remote Oscillator B input, located next to the Ro-A or Ro-B text labels.
- See Steps below...

From the Shelf Page

- Right click on either the Remote Oscillator (RO) A or B LED, or associated text.
- See Steps below...

...Steps

- Select *Ensembling... from the popup menu. (This will display the RO-A or RO-B Ensembling dialogue box)*
- Click Allow to enable ensembling, or Inhibit to disable ensembling.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Enable / Disable Monitoring for a Remote Oscillator (RO)

To enable or disable monitoring a Remote Oscillator:

From the Overview Page

- Right click on either the Remote Oscillator A or Remote Oscillator B input, located next to the Ro-A or Ro-B text labels.
- See Steps below...

From the Shelf Page

- Right click on either the Remote Oscillator (RO) A or B LED, or associated text.
- See Steps below...

...Steps

- Select *Monitoring... from the popup menu. (This will display the RO-A or RO-B Monitoring dialogue box)*
- Click Enable to enable monitoring, or Disable to disable monitoring.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Ensemble / Un-ensemble a Span

To ensemble or un-ensemble a Span:

From the Overview Page:

- Right click on either the Span A or Span B input, located next to the Span-A or Span-B text labels.
- See Steps below...

From the Shelf Page:

- Right click on either the Span A or B LED, or associated text.
- See Steps below...

...Steps

- Select *Ensembling... from the popup menu. (This will display the Span-A or Span-B Ensembling dialogue box)*
- Click Allow to enable ensembling, or Inhibit to disable ensembling.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Enable / Disable Monitoring for a Span

To enable or disable monitoring a Span:

From the Overview Page:

- Right click on either the Span A or Span B input, located next to the Span-A or Span-B text labels.
- See Steps below...

From the Shelf Page:

- Right click on either the Span A or B LED, or associated text.
- See Steps below...

...Steps

- Select *Monitoring... from the popup menu. (This will display the Span-A or Span-B Monitoring dialogue box)*
- Click Enable to enable monitoring, or Disable to disable monitoring.

- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3000 - Read / Set Alarm Output for a T1 Output

To read or set the Alarm Output for a T1 Output:

From the Overview Page:

- Right click on either the *T1-A or T1-B output, located below the T1-A or T1-B text labels.*
- See Steps below...

From the Shelf Page:

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select T1 Outputs from the popup menu. (This will display another set of choices)
- Select either T1-A or T1-B from the drop down menu. (This will display another set of choices)
- Select Alarm.... (This will display the Alarm Out dialogue box)
- Select an alarm out from the values in the drop down list box. The options are either AIS, Squelch or SSM.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

NB. You can not set the Alarm Out value to SSM unless the Frame Type value is set to ESF.

TimeSource 3100 - Read / Set Alarm Output for an E1 Output

To read or set the Alarm Output for a E1 Output:

From the Overview Page:

- Right click on either the *E1-A or E1-B output, located below the E1-A or E1-B text labels.*
- See Steps below...

From the Shelf Page:

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select E1 Outputs from the popup menu. (This will display another set of choices)
- Select either E1-A or E1-B from the drop down menu. (This will display another set of choices)
- Select Alarm.... (This will display the Alarm Out dialogue box)
- Select an alarm out from the values in the drop down list box. The options are either AIS, Squelch or SSM.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

NB. You can not set the Alarm Out value to SSM unless the Frame Type value is set to CAS with CRC4, or CCS with CRC4.

TimeSource 3000 - Read / Set Frame Types for a T1 Output

To read or set the Frame Type for a T1 Output:

From the Overview Page:

- Right click on either the *T1-A or T1-B output, located below the T1-A or T1-B text labels.*

- See Steps below...

From the Shelf Page:

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select T1 Outputs from the popup menu. (This will display another set of choices)
- Select either T1-A or T1-B from the drop down menu. (This will display another set of choices)
- Select Frame Type.... (This will display the Frame Type dialogue box)
- Select an alarm out from the values in the drop down list box. The options are either ESF or D4.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3100 - Read / Set Frame Types for an E1 Output

To read or set the Frame Type for a E1 Output:

From the Overview Page:

- Right click on either the *E1-A or E1-B output, located below the E1-A or E1-B text labels.*
- See Steps below...

From the Shelf Page:

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select E1 Outputs from the popup menu. (This will display another set of choices)
- Select either E1-A or E1-B from the drop down menu. (This will display another set of choices)

- Select Frame Type.... (This will display the Frame Type dialogue box)
- Select an alarm out from the values in the drop down list box. The options are either CAS, CAS4, CCS, CCS4 or NONE.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Operating the Alarm Cutoff

To silence audible alarms on the TS3xxx equipment:

From the Overview Page:

- Right click anywhere on the blue block representing the main Time Source 3xxx equipment.
- See Steps below...

From the Shelf Page:

- Right click on the ACO LED or *ACO label.*
- See Steps below...

...Steps

- Select Alarm Cut Off... from the popup menu. (This will display a confirmation dialogue box)
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Read Current Alarm List

To view the current alarms for the TimeSource 3xxx equipment:

From the Shelf Page

- Right click on the CRIT, MAJ or MIN LEDs, or the alarm text located about the LEDs.
- See Steps below...

...Steps

- Select *Alarm List... from the popup menu. (This will display the Alarms List dialogue box)*
- Select OK to close the window.

TimeSource 3xxx - Read / Set the System Identifier (SID)

The TimeSource equipment provides an identifying string known as the System Identifier (SID). This string forms the basis of the header for all command responses and notifications generated by the equipment.

To read or set the System Identifier (SID):

From the Overview Page

- Right click anywhere on the blue block representing the main Time Source 3xxx equipment.
- See Steps below...

From the Shelf Page

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select *Card Administration from the popup menu. (This will display another set of choices)*
- Select System Identifier... from the drop down menu. (This will display the System Identifier dialogue box showing the current SID)
- Edit the current value in the edit field. Please note that the SID can be edited using the standard editing facilities:
    - Left/right arrow keys.
    - Backspace.
    - Forward delete.
    - Shift left/right arrow to highlight text.
    - Control-x to delete highlighted text.
    - Control-c to copy highlighted text.
    - Control-v to paste.
    - Control-z to undo last edit action.
- Click Apply to close the box and save changes, or Cancel to close the box.

- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Read / Set Time Of Day (TOD) Format

To read or set the Time Of Day Format:

From the Overview Page

- Right click anywhere on the blue block representing the main Time Source 3xxx equipment.
- See Steps below...

From the Shelf Page

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select *Card Administration from the popup menu. (This will display another set of choices)*
- Select TOD... from the popup menu. (This will display the TOD Format dialogue box)
- Select a TOD format from the values in the drop down list box. The options are either CISCO, NTP4 or NONE.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Read / Set Communication (COM) Port Parameters

The TimeSource 3xxx equipment provides three serial communication ports for management facilities. Each communication port has a host of configurable attributes which control the communication behaviour.

To read or set the communication parameters:

From the Overview Page

- Right click anywhere on the blue block representing the main Time Source 3xxx equipment.
- See Steps below...

From the Shelf Page

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select *Comm Administration from the popup menu. (This will display another set of choices)*
- Select the communication port you wish to modify from the popup menu. (This will display the COM- dialogue box)
- A dialog box will appear providing details of the current communication attributes associated with the selected port.
- Select the attributes you wish to change.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

The following list provides a brief description of each attribute:

Baud Rate - Is the data transfer of the port. It should be noted that if the baud rate of the port currently used by TimeScan is changed then TimeScan should be closed. The baud rate set in the Shortcut window should be modified accordingly and the Tool Palette re-launched. It is not possible to modify the baud rate of communication port 2. Eight values can be selected from the drop down list and these are as follows : 115000, 57600, 38400, 19200, 9600, 4800, 2400 and 1200.

Monitor Message - Is an attribute to control the viewing of communication port messages. Two values can be selected by checking or un-checking the check box. When the box is checked the messages can be viewed from all communication ports. When the box is unchecked the messages can be viewed from only one communication port. The check box control must be un-checked for the port used by TimeScan Craft.

Keep Alive - Is an attribute to controls the sending of the COMPLD message in minutes. When the value is zero, no COMPLD message is output. When the value is between 1 and 255 then the COMPLD message is output accordingly.

End Of Text - This attribute represents the numeric value of the ASCII character to be used as an additional terminating character. Zero indicates no additional terminating character. It should be noted that End of Text must be set to zero, `00', for the port currently used by TimeScan.

Echo - This check box controls the ability of the port to echo received characters. It is recommended that Echo should be turned off, un-checked, for the port currently used by TimeScan.

Report Alarms - This check box controls the ability of the port to send spontaneous alarm messages. It is recommended that Report Alarms should be turned on, checked, for the port currently used by TimeScan.

Auto Log Off - Is an attribute to set the number of minutes before the communication port disconnects though in-activity. Zero indicates auto log off is disabled. Setting the auto log off between 1 and 255 minutes will enable the attribute.

Hardware flow control - This check box controls whether the port uses hardware flow control.

Software flow control - This check box controls whether the port uses software flow control.

Parity - This attribute specifies the parity checking on the communication port. The parity can be set to even, odd or none.

Stop Bits - This attribute specifies the number of stop bits being used by the communication port.

TimeSource 3xxx - Read / Set Signal Type for a Span (SPAN) Input

To read or set the signal type for a Span:

From the Overview Page:

- Right click on either the Span A or Span B input, located next to the Span-A or Span-B text labels.
- See Steps below...

From the Shelf Page:

- Right click on either the Span A or B LED, or associated text.
- See Steps below...

...Steps

- Select *Signal Type... from the popup menu. (This will display the Signal Type dialogue box)*
- Select a signal type from the values in the drop down list box. The options are either DIGITAL or ANALOG.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Enable / Disable SSM Message for Qualifying for a Span (SPAN) Input

To enable or disable the SSM qualify for a Span:

From the Overview Page:

- Right click on either the Span A or Span B input, located next to the Span-A or Span-B text labels.
- See Steps below...

From the Shelf Page:

- Right click on either the Span A or B LED, or associated text.
- See Steps below...

...Steps

- Select *Signal Qualify... from the popup menu. (This will display the Signal Qualify dialogue box)*
- Select either TRUE or FALSE from the values in the drop down list box. Enter TRUE to qualify the span input or FALSE to not qualify the span input.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Read / Set SSM Channel for a Span (SPAN) Input

To read or set the SSM Channel bits for a Span:

From the Overview Page:

- Right click on either the Span A or Span B input, located next to the Span-A or Span-B text labels.
- See Steps below...

From the Shelf Page:

- Right click on either the Span A or B LED, or associated text.
- See Steps below...

...Steps

- Select *Signal Channel... from the popup menu. (This will display the Signal Channel dialogue box)*
- Enter the required value by typing directly into the field, or use the spin arrows on the side of the field to enter the value.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Copy Memory

To copy memory from volatile to non-volatile memory for the TS3xxx equipment:

From the Overview Page

- Right click anywhere on the blue block representing the main Time Source 3xxx equipment.
- See Steps below...

From the Shelf Page

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select *Card Administration from the popup menu. (This will display another set of choices)*
- Select Copy Memory... from the drop down menu.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3xxx - Add, Edit and Delete User Security

The TimeSource 3xxx equipment supports up to ten users in its security features. The range of features available to individual users depends upon their Access Level.

To add, retrieve, edit or delete a user:

From the Overview Page

- Right click anywhere on the blue block representing the main Time Source 3xxx equipment.
- See Steps below...

From the Shelf Page

- Right click anywhere on the TimeSource 3xxx graphic EXCEPT one on the LEDs.
- See Steps below...

...Steps

- Select Security Administration from the popup menu. (This will display another set of choices)
- Select either one of the three options Add User..., Edit Users... and Delete User....

Add User...

- After selecting the Add User... menu option, this will display the Add User dialogue box.
- Enter the required User Name, Password and Access Level.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

Edit Users...

- After selecting the Edit Users... menu option, this will display the Edit User dialogue box.
- Edit a user by entering the new password and access level by the side of the user.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

Delete User...

- After selecting the Delete User... menu option, this will display the Delete User dialogue box.
- Delete a user by entering the user name.
- Click Apply to close the box and save changes, or Cancel to close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

Frequently Asked Questions...

1 Q. **I have tried to delete a module form a shelf but I keep getting the error message, “Invalid sequence”... why?**

A. The module is not in the correct state for deletion. In general for modules with input or output ports the following procedure must be followed:

5 Remove all ports.

6 Remove module.

7 Delete all ports.

8 Delete module.

2 Q. **I have physically removed a module from a shelf. Can I delete it form the DCD inventory without putting it back?**

A. Yes... although the module is shown has missing, if you select this graphic it will still provide the configuration menus for that module so you can still delete it.

3 Q. **There is a module shown on a shelf page. The module is not removed (disabled) but all of the LEDs are shown grey... why?**

A. Unfortunately TimeScan can not accurately determine the state of the LEDs.

4 Q. **When I open Configuration Manager the shelves shown are different to my actual DCD shelves. Is this a fault?**

A. No. you have not selected the correct Element Type when you created the shortcut with the TimeScan Shortcut tool.

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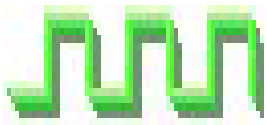
Chapter 5 Performance Manager



Performance Manager is a tool that provides a graphical representation of each Performance Synchronisation Monitoring (PSM) port. Performance Manager has two major functions

- *Configuration of PSM module(s)*
- *PSM module Performance data retrieval*

Why would I need to use the Performance Manager?

When you need a concise interface for information regarding the functional state of the ports and configuration actions.

What's in this chapter?

This User Guide chapter contains all the information you need to know to exploit the features of the Performance Manager. If you need to use the chapter as a quick reference guide, there is a keyword index at the end.

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Opening the Performance Manager Application

Start this application from Network Browser.

A Tour of Performance Manager

As you can see below, Performance Manager is composed of a number of controls:

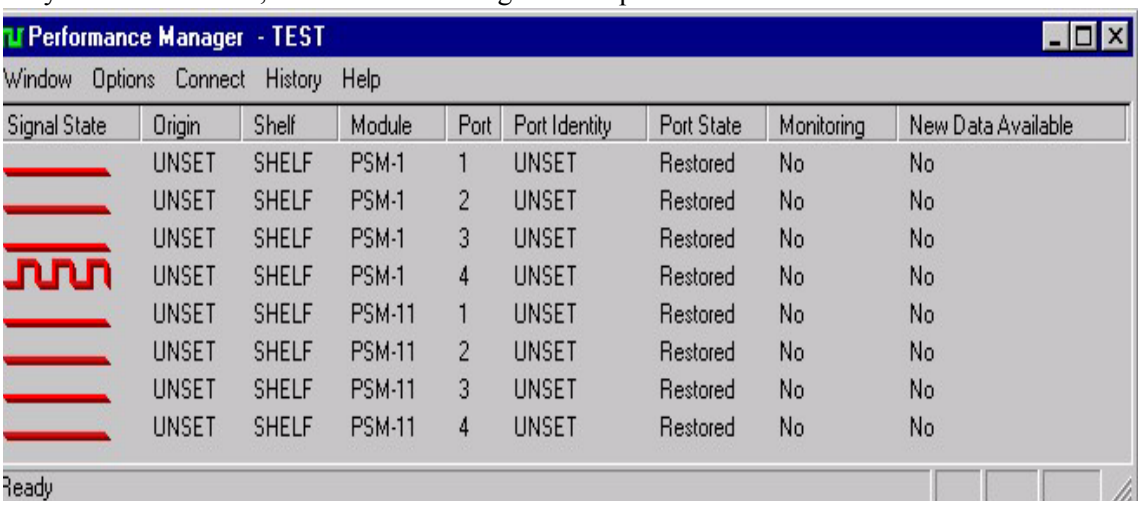

Figure 38 The Performance Manager Main Window

The following sections will discuss each one in turn.

The PSM Port Table

The table is a list of all the PSM ports and related data

- **Signal State**: Describes graphically the current state of the signal applied to the port.
- **Origin:** The description of the signal origin, a text string that is intended to be used as a unique identifier of the path or source of the reference signal.
- **Shelf**: The shelf that holds the module i.e. Master, Expansion1.
- **Module**: The unique module name i.e. PSM-4, PSM-6
- **Port**: The port number that the row refers to.
- **Port State**: The current state of the port i.e. removed, restored.
- **Monitoring**: Indicates whether or not a collection schedule has been activated for the port and the frequency.
- **Data Available**: Indicates whether or not data has been collected for the port since the current Schedule was activated.

Signal state graphical indicators:

- *Signal Present and satisfactory* -a train of green square waves

- *Signal present but Thresholds violated* - a train of red square waves

- *Loss of Signal* - a flat red line

- *Signal manually removed* - blank

Each column of a data type has its own context menu which can be activated by clicking the right mouse button over the required attribute. Further information on the commands that can be performed can be found in the next section of this guide.

Retrieving Performance Data Immediately

By clicking the right mouse button over the Monitoring column a menu will appear for the particular port. Select the *Retrieve Data* option.

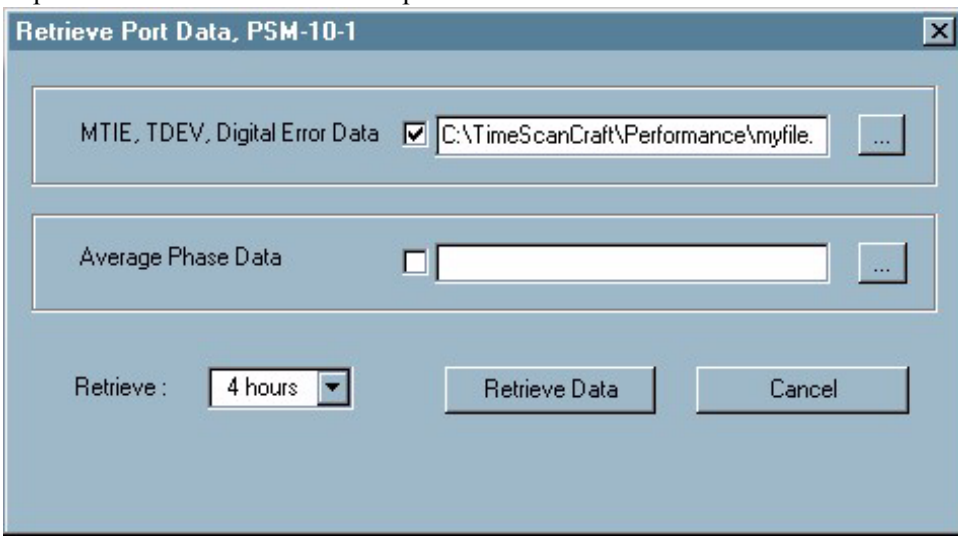

Figure 39 The Retrieve Port Data Dialogue Box

The Retrieve Port Data dialogue box will appear with the name of the port in the title bar.

To retrieve MTIE, TDEV and Digital Error Data, specify the file name in which the data is to be stored. The button with the three dots will allow you to browse for a file location and specify a file name. The extension for these files is *.PMT. You may also choose the amount of data that you wish to collect: four, eight, twelve or twenty four hours' worth.The *Retrieve Data* button will then be activated.

To retrieve Average Phase Data, follow the same procedure as above, with the exception that the file extension is *.PMP.

The default directory for these files is ‘ \Performance’ relative to the installation directory.

Use the *Retrieve Data* button to retrieve the data immediately.

While the data is being retrieved, a dialogue box will be displayed which will provide feedback on the status of the operation. Retrieval operations may take several minutes to complete.

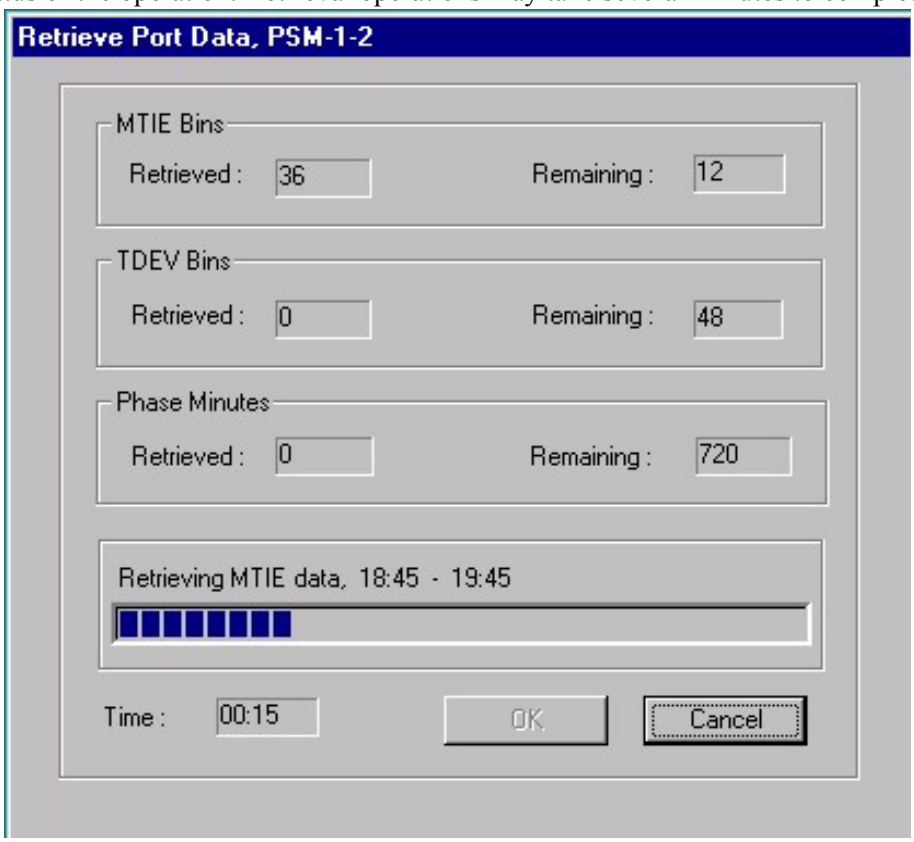

Figure 40 The Retrieval Progress Dialogue Box

If a fault occurs while data is being retrieved, the Performance Manager will write diagnostic information to the error log.

Note: This information is only designed to alert the user that a fault has occurred, not to provide a comprehensive explanation.

Activating a Schedule

By clicking the right mouse button over the *Monitoring* column a menu will appear for the particular port. Select the Scheduling option.

The Scheduling dialogue box will appear.

.

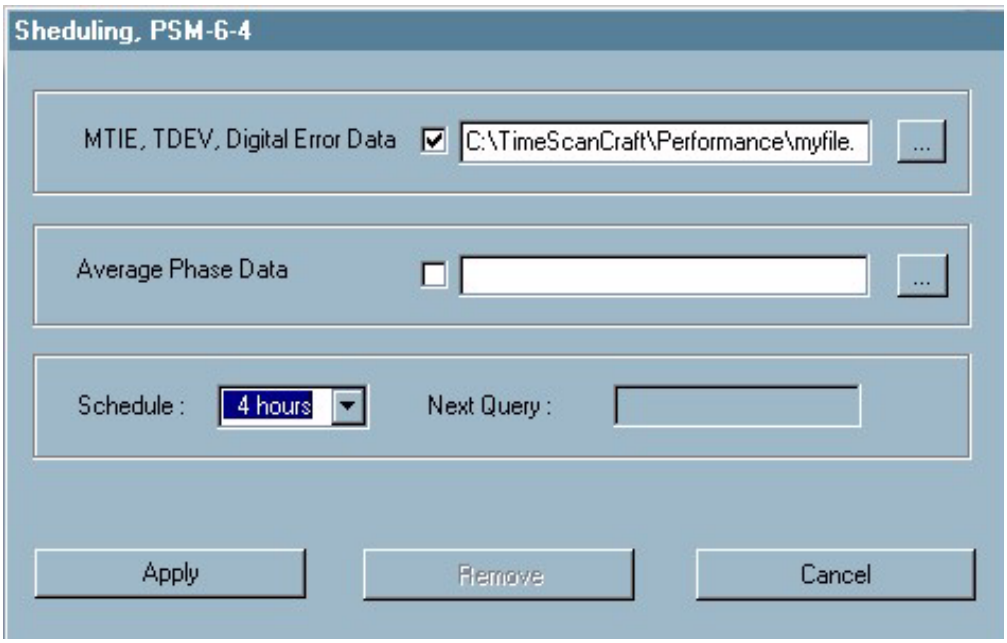

Figure 41 The Scheduling Dialogue Box, Showing Port Name In Title Bar

To retrieve MTIE, TDEV and Digital Error Data, specify the file name in which the data is to be stored. The button with the three dots will allow you to browse for a file location and specify a file name. To retrieve Average Phase data follow the same procedure as above. The extension for these files is *.PMT. You may also choose the amount of data that you wish to collect: four, eight, twelve or twenty four hours' worth. The Apply button will now be activated. The default directory for these files is '\Performance' from the installation directory.

Press the *Apply* button and the Schedule will be activated.

You will now return to the original window and you will notice that the table row of the port on which you wanted performance data has changed. It now states that monitoring is active and displays the frequency of that monitoring.

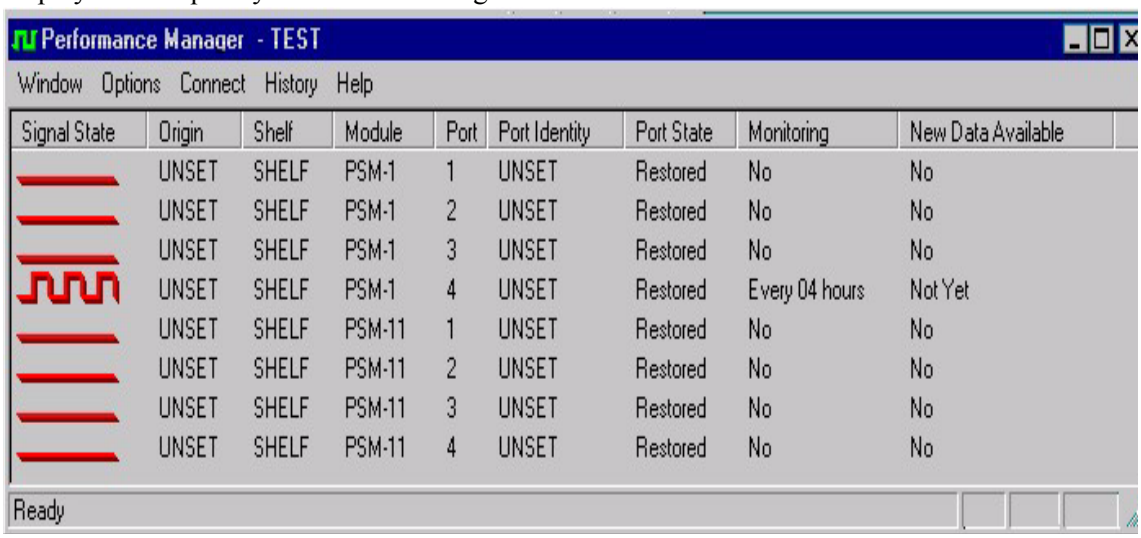

Figure 42 The Main Screen, Showing Active Monitoring On Port PSM-1

n.b. *Performance Manager will be unable to gather data if it is closed down. Once you have activated a schedule, leave the application open until all the required data is collected.*

Deactivating a Schedule

Clicking the right mouse button over the *Monitoring* column will cause a menu to appear for the particular port. Select the *Scheduling* option.

The Scheduling dialogue box will appear with the name of the port in the title bar.

Press the *Stop* button and the Schedule will be deactivated.

Configuring Ports

Performance manager allows you to configure PSM Ports in the same way that the application Configuration Manager does.

If you click the right mouse button over the various columns you can access the configuration dialogue boxes. For example, the *Origin* column has a context menu containing *Signal State* and *Signal Administration* options. The *Shelf* and *Module* columns have *Card State* and *Card Administration* options.

For full information on how to use these configuring options see the user guide for Configuration Manager.

Disconnect/ Connect

A useful feature of Performance Manager is that it allows you to manually connect or disconnect from the DCD. This is ideal when the connection is via a modem. You can close a connection by selecting *Connect* or *Disconnect* from the program menu. If a schedule is running, Performance Manager will automatically re-connect to the DCD collect the necessary data and then disconnect. This will reduce the amount of time on-line. When the application is not connected to the DCD, the column text will be greyed out, as shown in Figure 43.

.

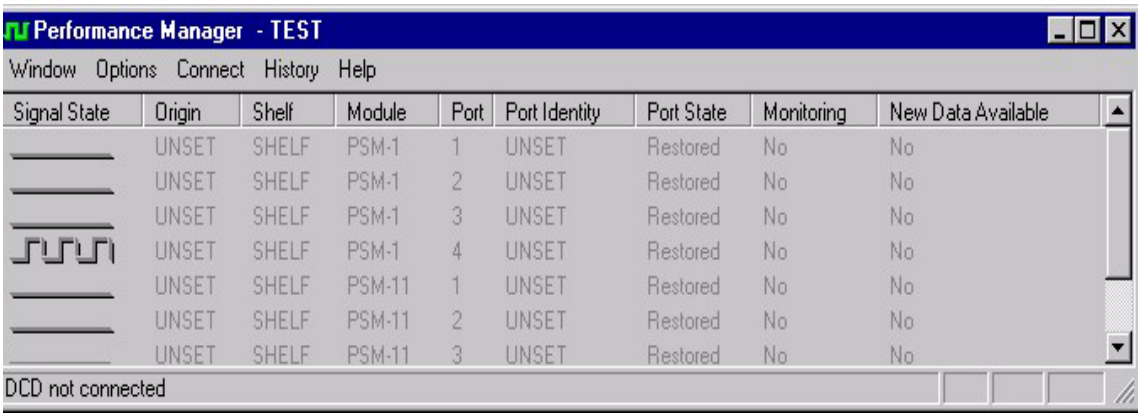

Figure 43 Performance Manager, Currently Disconnected From DCD

Diagnostics Log

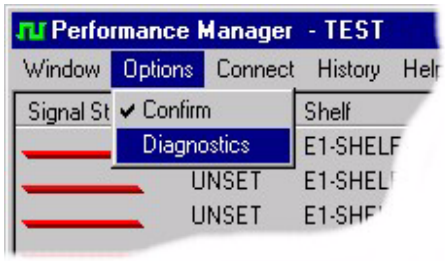

Figure 44 The Diagnostics Menu Item

If performance data has not been successfully retrieved, the Diagnostics Log can be activated in order to provide diagnostic information during subsequent retrieval attempts.

The Diagnostics Log will store any commands sent from the Performance Manager to the DCD that fail. The Diagnostics Log will be written to the *Performance* directory.

View the *Diagnostics Log* by selecting the *Diagnostics* item from the Options menu, as shown in Figure 44.

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Chapter 6 MTIE/TDEV

Mean Time Interval Error (MTIE), Time Deviation (TDEV) are standard measurements of synchronisation performance. The MTIE / TDEV Viewer is a graphing tool which may be used to view the MTIE and TDEV data recovered and stored by the TimeScan Craft Performance Manager.

Why would I need to use the MTIE / TDEV Viewer?

This tool provides a visual representation of the Maximum Time Interval Error (MTIE) and Time Deviation (TDEV) performance measurements automatically calculated by the Precision Synchronisation Monitor (PSM) Modules located within the DCD elements.

What's in this chapter?

This User Guide chapter contains all the information you need to know to exploit the features of the MTIE/TDEV Viewer. There is a table of contents on page 2. If you need to use the chapter as a quick reference guide, there is a keyword index on page 11. If you have any problems or queries regarding MTIE/TDEV Viewer try the Frequently Asked Question section, page 10.

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Opening the MTIE/TDEV Viewer Application

This application is opened from the Monitor User item on either the Windows *Start* Menu or the Unix *CDE Front Panel.*

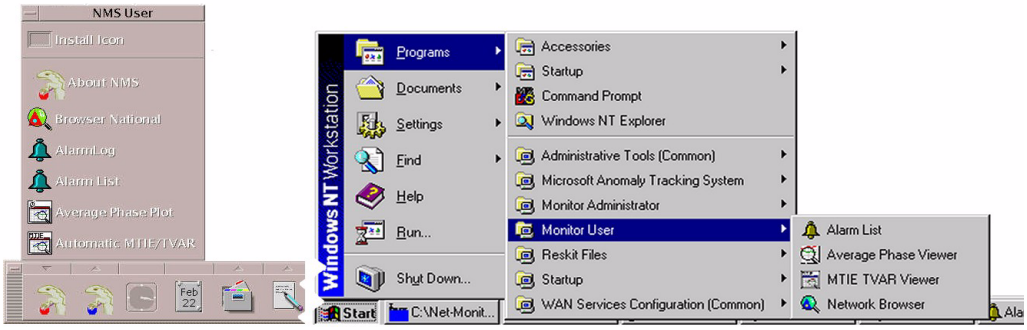

Figure 45 The Unix CDE Front Panel / Windows Start Menu

A Tour of the MTIE/TDEV Viewer

As you can see in Figure 2, MTIE/TDEV Viewer is composed of a number of controls.

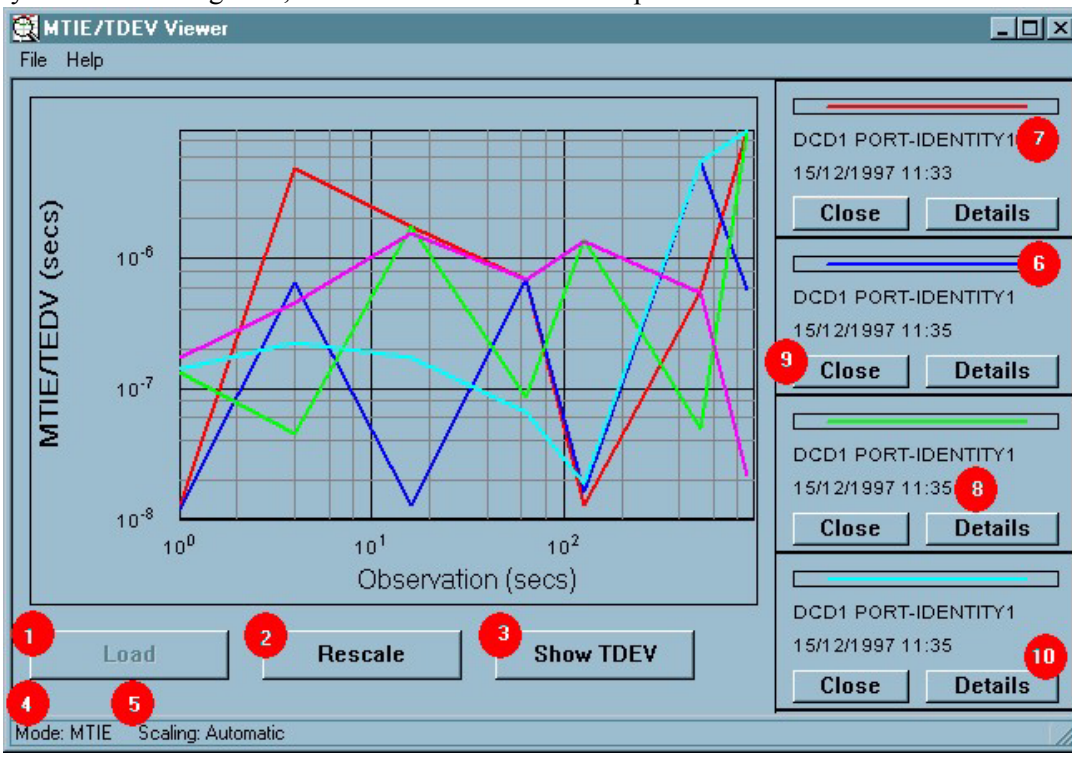

Figure 46 The Main MTIE / TDEV Viewer Window

The following list will identify each one in turn.

7 *Load* Button, use to load a MTIE/TDEV curve.

8 *Rescale* Button, opens plot rescale options Dailog.

9 *MTIE TDEV Toggle*, displays the curve for MTIE/TDEV.

10 *Mode Status*, displays the current curve mode, MTIE or TDEV.

11 *Scaling Status*, displays the current scale mode.

12 *Legend Bar*, displays the colour that represents the relevant phase curve.

13 *Curve Identity*, displays the Distinguished name and the port identity of the curve.

14 *Time Stamp*, displays the time when the file was first created.

15 *Close Curve* Button, removes the legend and plot from the window.

16 *Details* Button, displays the phase curve details dialogue.

Viewing A Performance File

To view Performance data, first click the *Load* button. This will display a standard *Open File* dialogue box which will display Performance records created by the Performance Manager.

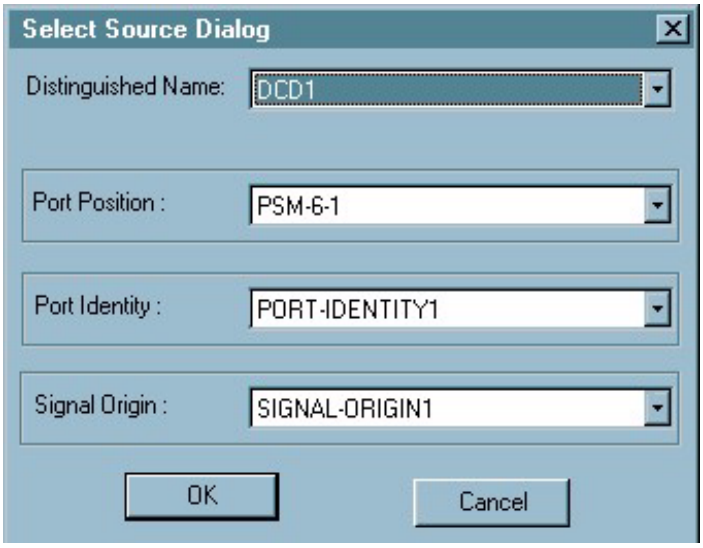

Figure 47 The Select Source Dialogue Box

On opening an appropriate file, the Select Source dialogue (Figure 3) will appear. This dialogue allows you to select MTIE/TDEV data for display. The *Distinguished Name* list contains the names of each source DCD found in your selected file. Choose one from the drop down list.

The *Port Position*, *Port Identity* and *Signal Origin* will contain appropriate references to the source ports available in your selected file. Choose a port.

Press *OK* to continue or *Cancel* to quit loading. The Select Data Set Dialogue window (Figure 3) will be produced, listing periods for which MTIE/TDEV data is available.

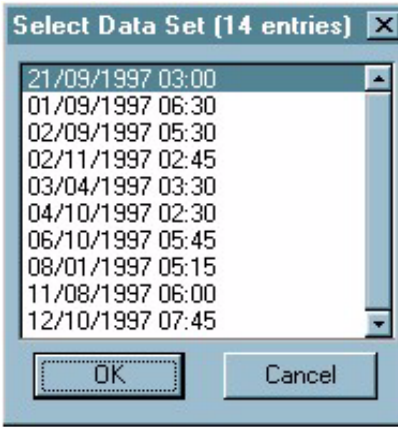

Figure 48 The Select Data Set Dialogue

Clicking the *OK* button will immediately display the selected data set, as shown in Figure 5.

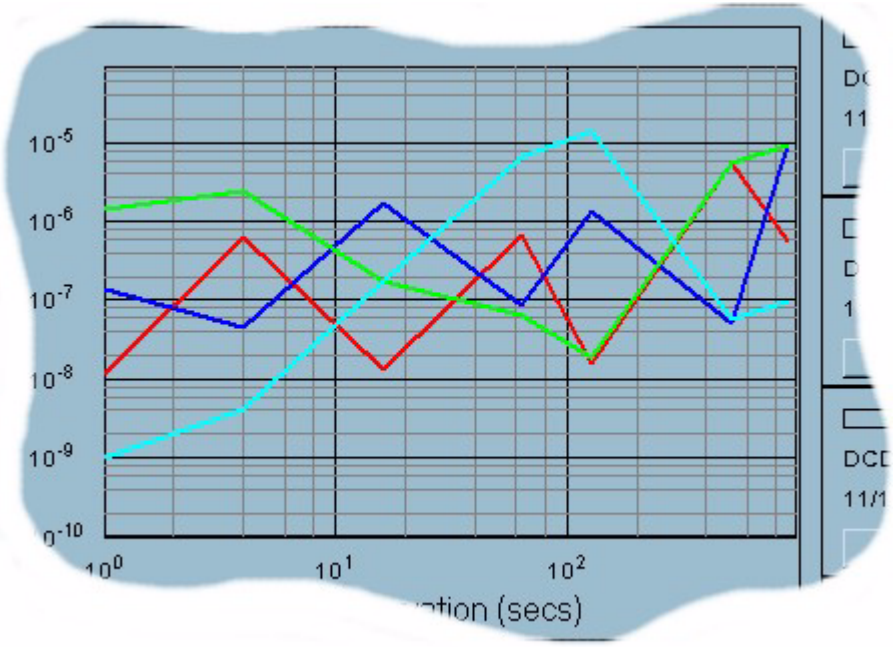

Figure 49 The Graph Curves (detail)

The curve plot window is capable of displaying MTIE or TDEV curves on a logarithmic graph.

On start up the application defaults to TDEV mode. The mode may be swapped by simply selecting the *Show TDEV* button on MTIE graph or *Show MTIE* on the TDEV graph. A performance bin represents approximately 15 minutes worth of data. On loading a performance bin you will see a small *Legend Panel* to the right of the plot window. This provides the key for the curve plot window.

If you attempt to load a file that does not contain data then the following warning will be displayed.

Figure 50 Incorrect File Loaded Warning

The graph is capable of displaying up to five curves simultaneously.

Getting More information about MTIE/TDEV Curves

On loading a phase curve you will see a coloured curve drawn in the plot window and a small *Legend Panel* (Figure 7) drawn to the right of the plot window.

Figure 51 The Legend Panel

This and other legend panels provide the key for the plot window. You will see each legend panel contains a coloured line so you can match it with a curve on the plot. The key colours are: red, blue, green, yellow and purple. No two curves will have the same colour, so there is never ambiguity in either the plot or the plot key.

If a plot becomes obscured by the other plots, it is possible to bring it to the front by selecting the *legend bar* (Figure 8) of the obscured plot.

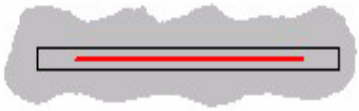

Figure 52 The Legend Bar

Selecting the *Details* button will display a dialogue box which contains all of the information related to the currently selected plot.

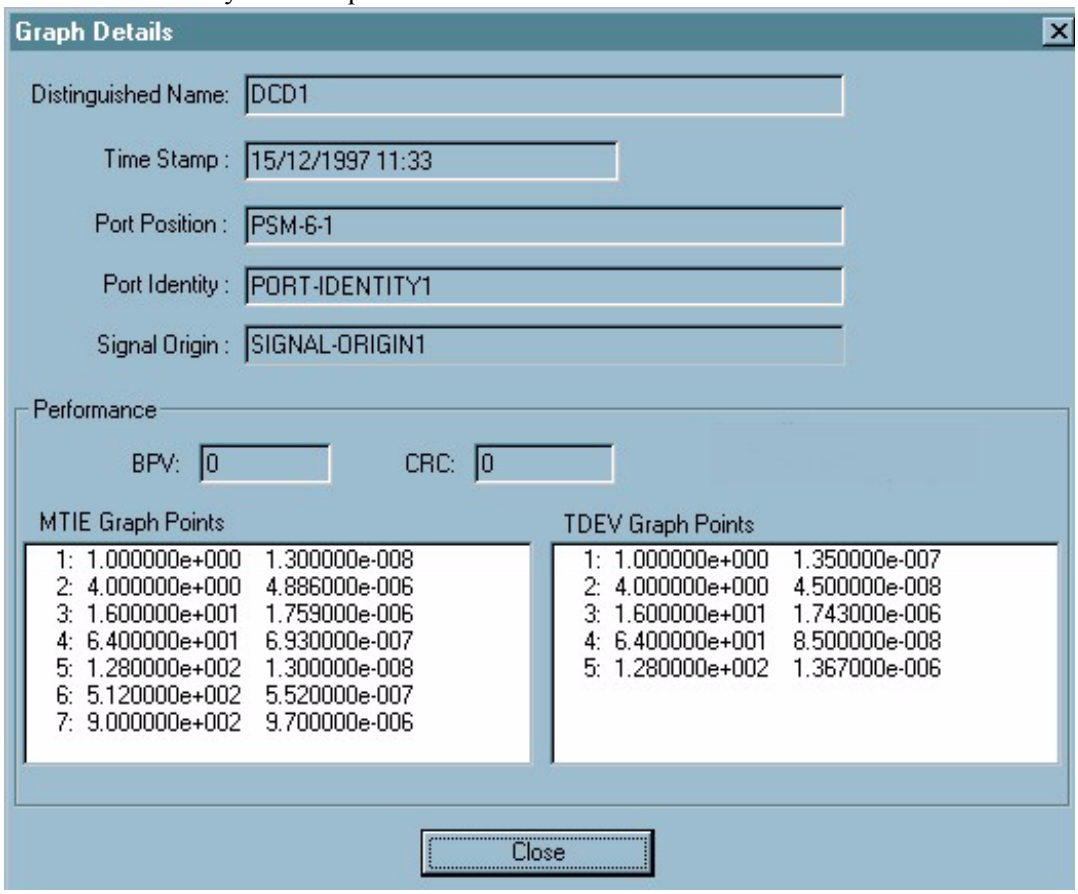

Figure 53 Graph Details Dialogue Box

Each input port supports two Digital Signal Error Performance measurements. These are:

BPV *Bi-Polar Violation* since the previous 15 Minute reset.

CRC *Cyclic Redundancy Check Error*, since the previous 15 minute reset.

These measurements represent the actual event count over the Bin period.

Rescaling The Plot

To rescale the plot click the *Rescale* button. The Rescale Dialogue box (below) will be displayed.

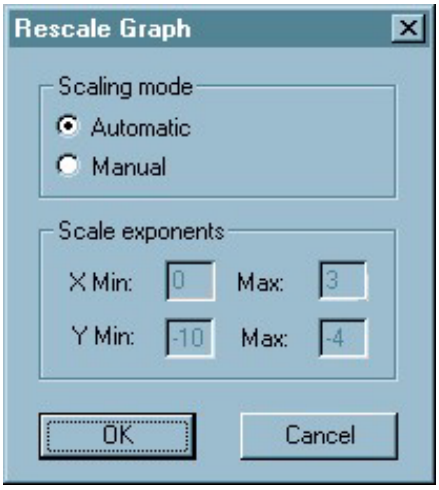

Figure 54 The Rescale Dialogue Box

The Rescale dialogue box allows you to scale in two ways automatically or manually. Automatic scaling is performed to the following criteria:

- All curves currently plotted are entirely contained within the plot window
- All curves are plotted to provide the maximum definition.

It is also possible to rescale manually. To do this, select the *Manual* radio button.

The *X Min* and *X Max* boxes are used to define the minimum and maximum x-axis values to be included. This values units are 10 seconds, so an input value of 3 will give 30 second worth of data. The X values determine the width of the plot window. The permissible range is 1.0e-99 and 1.0e+99 seconds.

The *Y Min* and *Y Max* boxes define the minimum and maximum y-axis values to be included. Again, the value units are each 10 seconds, to an input value of 3 will produce a 30 seconds range of data. The Y values determine the height of the plot window in seconds. The permissible period range is 1.0e-99 and 1.0e+99 seconds.

Printing the plot

Select *Print* from the *File* menu, the page will show the extent of data displayed on the main screen. *Print* will also generate a hard copy of the graph area, including user commands. *Print Setup* provides access to local and network printer configuration.

Saving files

Follow the usual procedure to save a file by selecting *Save* from the *File* menu. A box enabling you to select the data to save will be shown.

The save feature enables a performance bin to be selected and saved to file. The resultant file will have an *.AMT extension. All bin data will be maintained.

Frequently Asked Questions

5 Q. **I would like to load another curve, but the load button, or option, is not active (grey)... why?**

A. This application supports a maximum of five performance bins open at any one time. If there are already five bins open then you will have to close one in order to load another.

6 Q. **I have loaded a curve. The data seems to have loaded fine, there were no error messages, but I cannot see the curve on the graph...why?**

A. (i) If the plot is in manual re-scale mode, the curve you have loaded may not enter the region you have specified in the manual re-scale parameters. Select automatic re-scale mode and the graph window will adjust itself to display the curve you have just loaded.

A. (ii) The bin you have loaded does not contain sufficient data points to generate the curve for the current graph mode. Open the details window for this bin and see what data points are listed

7 Q. **I have loaded several curves. There is a legend panel with apparently no corresponding curve... what has happened to it?**

A. (i) You have loaded a curve which exactly overlays the apparently missing curve. If you select the legend of the curve that has apparently disappeared then this curve will be brought to the front.

A. (ii) The bin you have loaded does not contain sufficient data points to generate the curve for the current graph mode. Open the details window for this bin and see what data points are listed.

8 Q. **I have loaded the maximum number of phase curves (5) but I cannot see the fifth one on the legend panel. Why?**

A. The default window size only shows four legends. Use the resize region to make the window larger.

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Chapter 7 Average Phase Viewer

What is the Average Phase Viewer?

The Average Phase Viewer Application provides a visual representation of the average phase information maintained within the Performance Data.

Why would I need to use Average Phase Viewer?

This tool provides a visual representation of the Average phase curves collected by the Precision Synchronisation Monitor (PSM) Modules located within the DCD elements.

What's in this chapter?

This User Guide chapter contains all the information you need to know to exploit the features of the Average Phase Viewer. There is a table of contents below. If you need to use the chapter as a quick reference guide, there is a keyword index at the end and How to section. The Tour section will give a brief account of each control on the main window. If you have any problems or queries regarding Average Phase Viewer try the Frequently Asked Question section.

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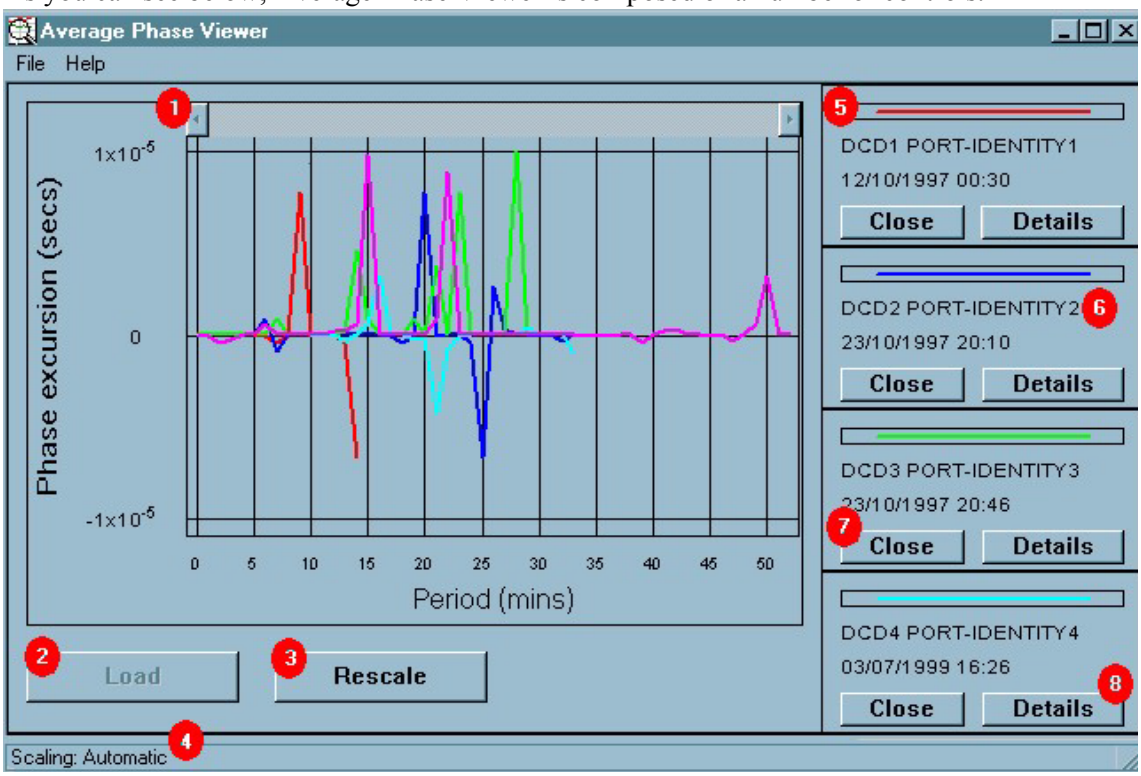
Opening Average Phase Viewer

Average Phase Viewer can be opened by clicking on the appropriate icon on the Tool Palette, or by selecting the Phase Viewer item from the Window *Start* menu, or the Unix *CDE Front* Panel.

A Tour of Average Phase Viewer

As you can see below, Average Phase Viewer is composed of a number of controls.



The following list will detail each one in turn.

8 **Scroll Bar**, enables scrolling of curves too long to fit in the window inset.

9 **Load Button**, use to load an average phase curve.

10 **Rescale Button**, opens plot rescale options Dailog.

11 **Status Bar**, displays the current scale mode (Automatic or Manual).

12 **Legend Bar**, displays the colour that represents the relevant phase curve.

13 **Curve Identity**, displays the Distinguished name and the port identity of the curve.

14 **Time Stamp**, displays the time when the file was first created.

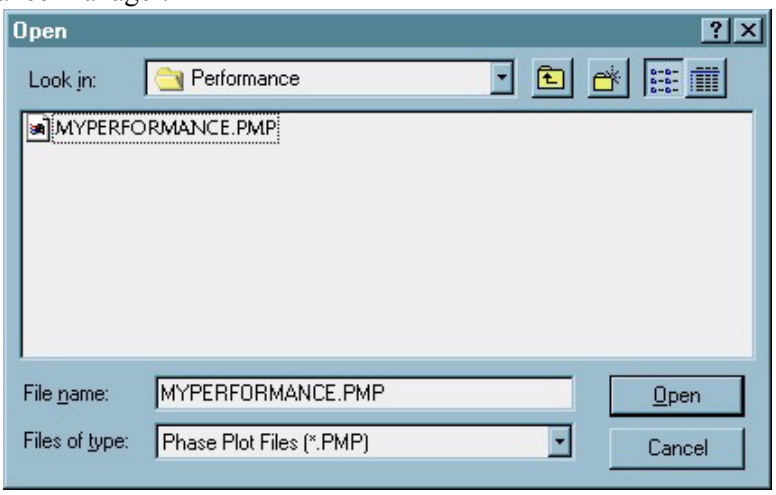
15 **Close Curve Button**, removes the legend and plot from the window.

16 **Curve Details Button**, displays the phase curve details dialogue.

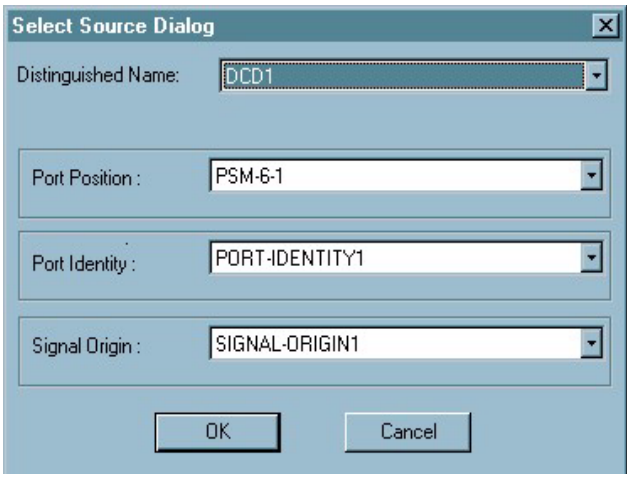
How to...

View a Performance File

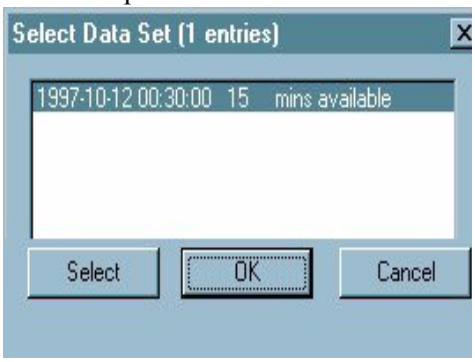
To view performance files first the appropriate file(s) needs to be opened. Click the *Load* button. This will display a standard Open File dialogue which will display Performance records created by the Performance Manager.



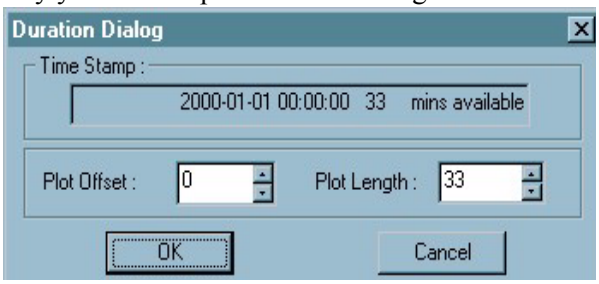
On opening an appropriate file the Select Source dialogue will appear. This dialogue allows you to select phase data for display. The *Distinguished Name* list contains the names of each source DCD found in your selected file. Choose a *Distinguished Name*. The *Port Position*, *Port Identity* and *Signal Origin* will contain appropriate references to the source ports available in your selected file. Choose a port.



Press *OK* to continue or *Cancel* to quit loading. The Select Data Set dialogue window below will be produced, listing periods for which phase data is available.



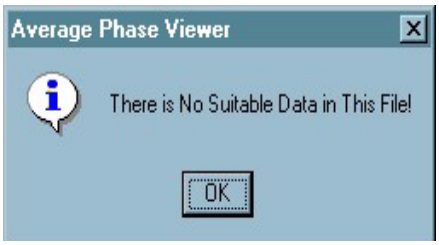
Clicking the *OK* button will immediately display the selected phase data set. For data sets greater than 10 080 points (one weeks worth) you will need to use the Duration dialogue launched from the *Select* button to specify you desired plot offset and length.



This dialogue allows you to control the plot offset and plot length for the selected data set. *Plot offset* represents number of points to be discarded from the beginning of the data set. *Plot length* represents the number of points to be plotted.

The curve plot window is capable of displaying phase curves on a linear graph.

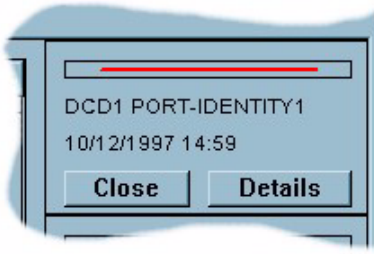
If you attempt to load a file that does not contain average phase data then the following warning will be provided.



The graph is capable of displaying up to five curves.

Find More Information About A Phase Curve

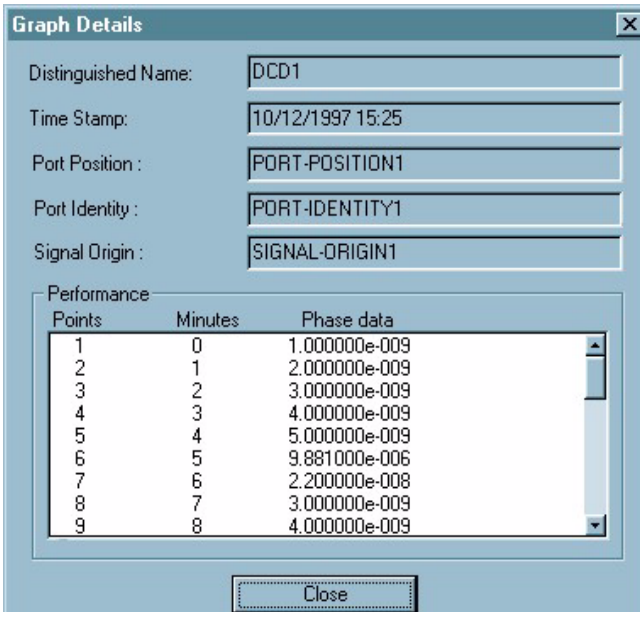
On loading a phase curve you will see, not only a coloured curve drawn in the plot window, but a small legend panel is drawn to the right of the plot window.



This and other legend panels provide the key for the plot window. You will see each legend panel contains a coloured line so you can match it with a curve on the plot; red, blue, green, yellow and purple. No two curves will have the same colour, so there is never ambiguity in either the plot or the plot key.

If a plot becomes obscured by the other plots it is possible to bring it to the front by selecting the legend bar of the obscured plot.

By selecting the *Details* button, a dialogue box will appear that lists all of the information related to the individual plot.



The *Points* field represents the first and subsequent points on the plot. The *Minutes* field represents the offset from the time stamp for each point. The *Phase Data* field represents the measured average phase value in seconds.

Analyse the Average Phase

The Average Phase Viewer application is very versatile and supports phase data visual analysis in both real time and relative time.

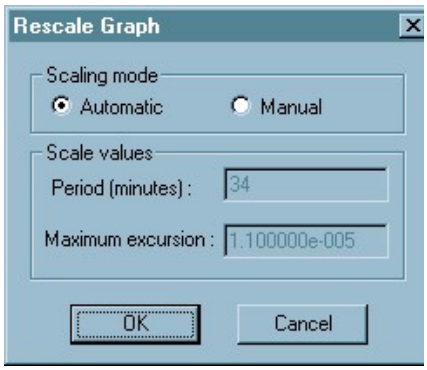
In order to analyse the effect of an external event on the phase performance of several synchronisation signals, it is necessary to compare historical phase curves over the ageing period. To do this you need only choose a range of starting times for each sample of the same curve you wish to analyse. This will provide a number of traces which will immediately highlight any ageing trends. Using this technique it is possible to provide continuous phase performance analysis of a given synchronisation signal over a period of up to five weeks. If continuous analysis is not required then the period is unlimited.

Of course the application will also support a combination of both techniques on a single plot.

Once a plot has been produced it may be apparent from the shape of the phase curves that there is a portion of the curve which is of some interest and a closer look is in order. This application provides plot re-scaling facility which will allow you to zoom in, or out, of a given portion of the plot.

Rescale a Phase Plot

By selecting the *Rescale* button at the foot of the main window the following dialogue window will be produced...



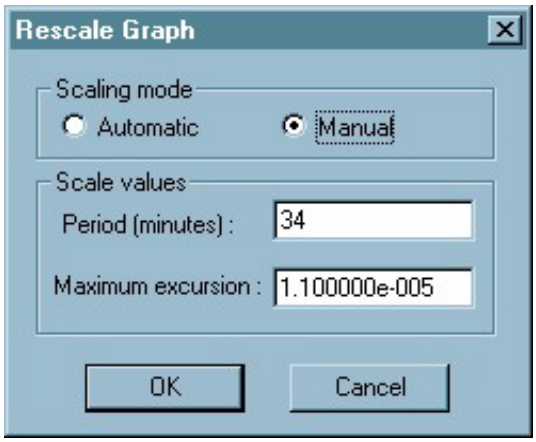
This window provides access to the two plot scaling modes provided by this application.

Automatic Plot Scaling Mode is the default mode. In automatic mode the application will select the maximum values of x-axis (phase excursion [seconds]) and y-axis (Period [minutes]) according to the following rules:

- All the curves currently plotted are entirely contained within the plot window.
- All curves are plotted to provide the maximum definition.

Automatic mode is useful when loading curves as you can always be assured that no matter how large or small the curve may be it will always be visible. However, you may wish to manually modify the ranges of the x and y axes in order to change the perspective of the plot...

Manual Plot Scaling Mode provides the means of dictating the ranges of the x and y axes. When the manual radio button is selected from the rescale dialogue window the controls below it become active.



Period dictates the width of the plot window in minutes. The permissible period range is between 2 minutes and 10080 minutes (1 week).

Maximum Excursion dictates the plus/minus phase excursion from the central zero point in seconds - effectively the height of the plot window. The permissible maximum excursion range is between $1.9e^{-99}$ and $1.0e^{+99}$ seconds!

The *Scaling Mode* can be changed at any time. The current mode is shown in the right hand column of the status bar on the main window.

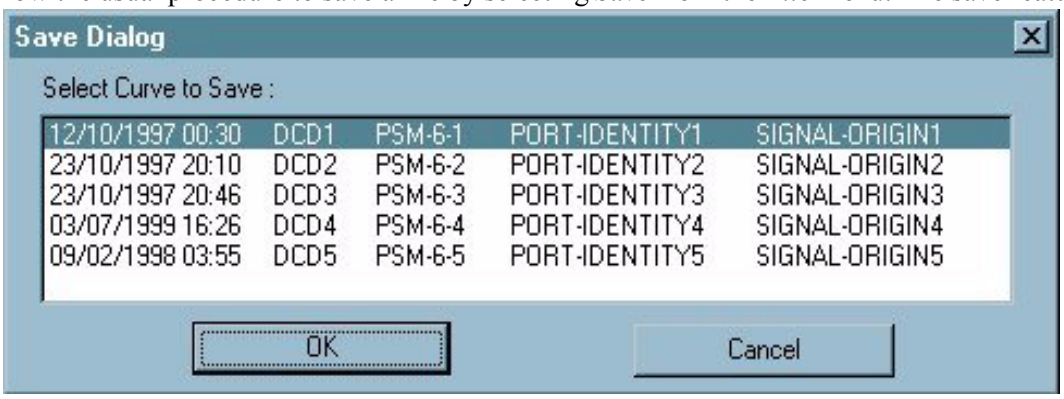
If you feel that the plot window itself is too small then simply pick up the frame of the application window and drag it to the size you want. Alternatively the application can assume full screen size by pressing the maximise / minimise button in the top right hand corner of the window frame.

Print the Plot

Select *Print* from the *File* menu, the page will show the extent of data displayed on the main Window. *Print* will also generate a hard copy of the graph area including user commands. Print setup provides access to local and network Printer configuration.

Save Files

Follow the usual procedure to save a file by selecting *Save* from the *File* menu. The save feature



enables a performance bin to be selected and saved to file. You can re-load files saved in this manner by selecting the *Open Saved File* command from the *File* menu item.

Frequently Asked Questions

9 Q. **I would like to load another curve, but the load button, or option, is not active (grey)... why?**

A. This application supports a maximum of five phase curves open at any one time. If there are already five curves open then you will have to close one in order to load another.

10 Q. **I have loaded a curve. The data seems to have loaded fine, there were no error messages, but I can't see the curve on the plot... why?**

A. (i) If the plot is in manual re-scale mode then the curve you have loaded does not enter the region you have specified in the manual re-scale parameters. Select automatic re-scale mode and the plot window will adjust itself to display the curve you have just loaded.

A. (ii) The bin you have loaded does not contain sufficient data points to generate the curve for the current graph mode. Open the details window for this bin and see what data points are listed

11 Q. **I have loaded several phase curves. There is a legend panel with apparently no corresponding phase curve... what has happened to it?**

A. You have loaded a phase curve which exactly overlays the apparently missing curve. This can happen if you, inadvertently, load the same curve twice. If you select the legend of the curve that has apparently disappeared then this curve will be brought to the front.

12 Q. **I have loaded the maximum number of phase curves (5) but I cannot see the fifth one on the legend panel. Why?**

A. The default window size only shows four legends. Use the resize region to make the window larger.

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Chapter 8 Software Manager

What is Software Manager?

Software Manager is an application that supports external program download with a range of intelligent cards.

Why would I need to use the Software Manager?

Software Manager makes software control for intelligent cards easy - there is no need to physically remove a PROM in order to download software.

What's in this chapter?

This User Guide chapter contains all the information you need to know to exploit the features of Software Manager. There is a table of contents below. If you need to use this chapter as a quick reference, try the keyword index on page 173.

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Opening Software Manager

Software Manager can be opened by clicking on the Software Manager icon in the Windows *Start* menu.

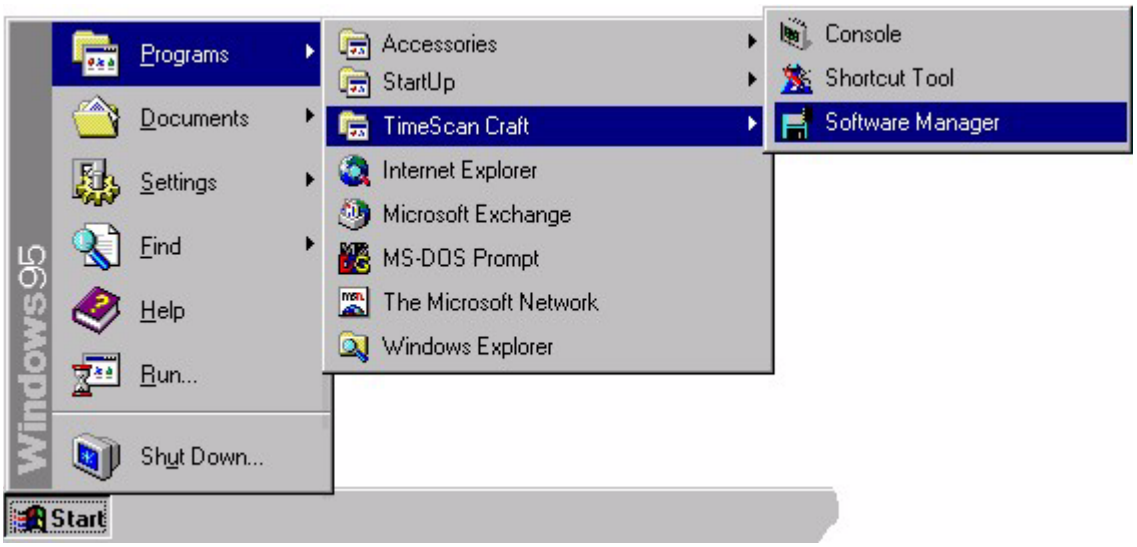

Figure 55 Starting Software Manager

When Software Manager is started successfully, the Element dialogue window will appear (Figure 56).

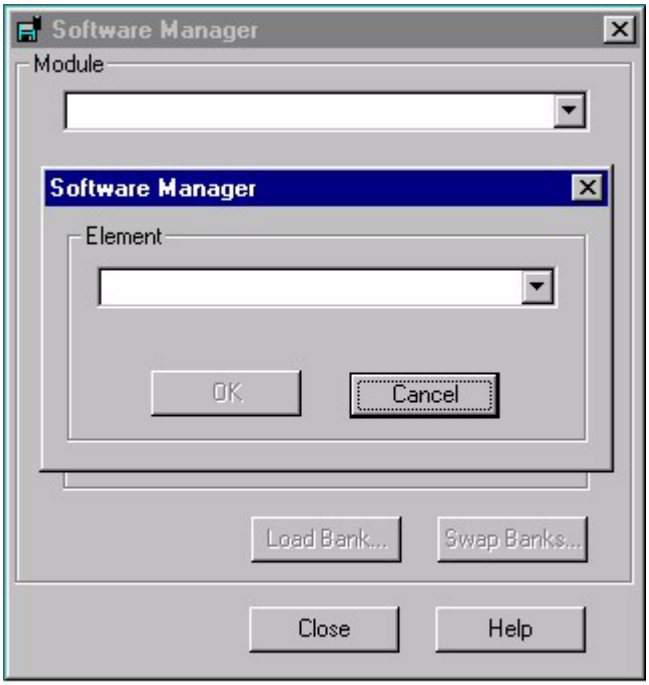

Figure 56 The Element Dialogue Window

Note: As software download is a rare and highly sensitive maintenance activity, it is partitioned from tools that perform more routine activities. Therefore, Software Manager is able to run as a separate entity to the communication server. However it will only operate if it has a dedicated connection. i.e. Toolpalette can be running but must be disconnected.

Selecting A Card

The Element Manager dialogue (Figure 57) is automatically opened when Software Manager is started. It allows a *shortcut* - previously created with the *Craft Shortcut* tool - to be selected from the drop down list.

Figure 57 Element Manager Dialogue, showing drop down list

Once you have selected a card from the list, press *OK* to continue Software Management on this card, or *Cancel* to leave the dialogue box. Software Manager will read the inventory of the target DCD and display a list of those cards that support external program download. Programme bank details for the currently selected card will be displayed on the front panel (Figure 58).

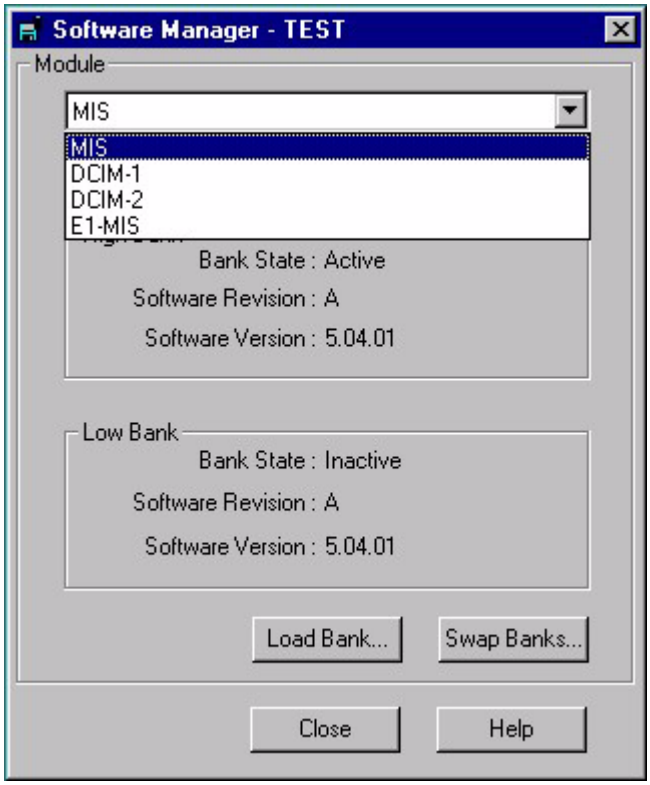

Figure 58 Programme Bank Details Of Currently Selected Card

Loading Software

Once you have successfully selected a card, select the *Load Bank...* button (Figure 58) to load the currently inactive program bank.

A common file dialogue will display program files that are compatible with the currently selected card (Figure 59). Click *OK* and *Cancel* in the usual ways to select software or dismiss this dialogue.

In the case of MIS cards, only program files that are compatible with the currently inactive bank will be displayed. For example, if the high bank is inactive, program files with a *.hi* extension will be displayed. Likewise, if the low bank is inactive, program files with a *.lo* extension will be displayed.

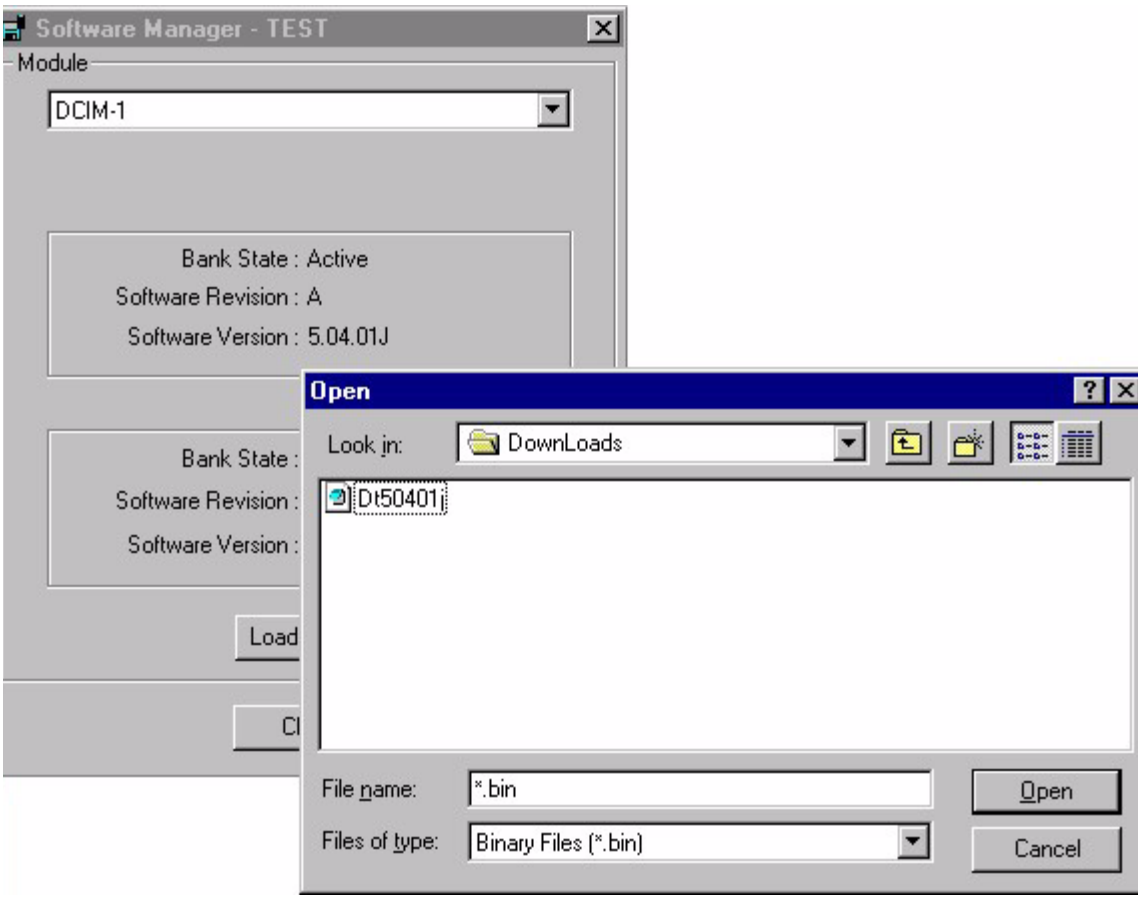

Figure 59 Compatible Files For Current Card

The default directory for these files is '\Downloads' from the installation directory.

While the selected program is downloading, a dialogue will be displayed to roughly indicate the progress of the operation. This is shown in Figure 60.

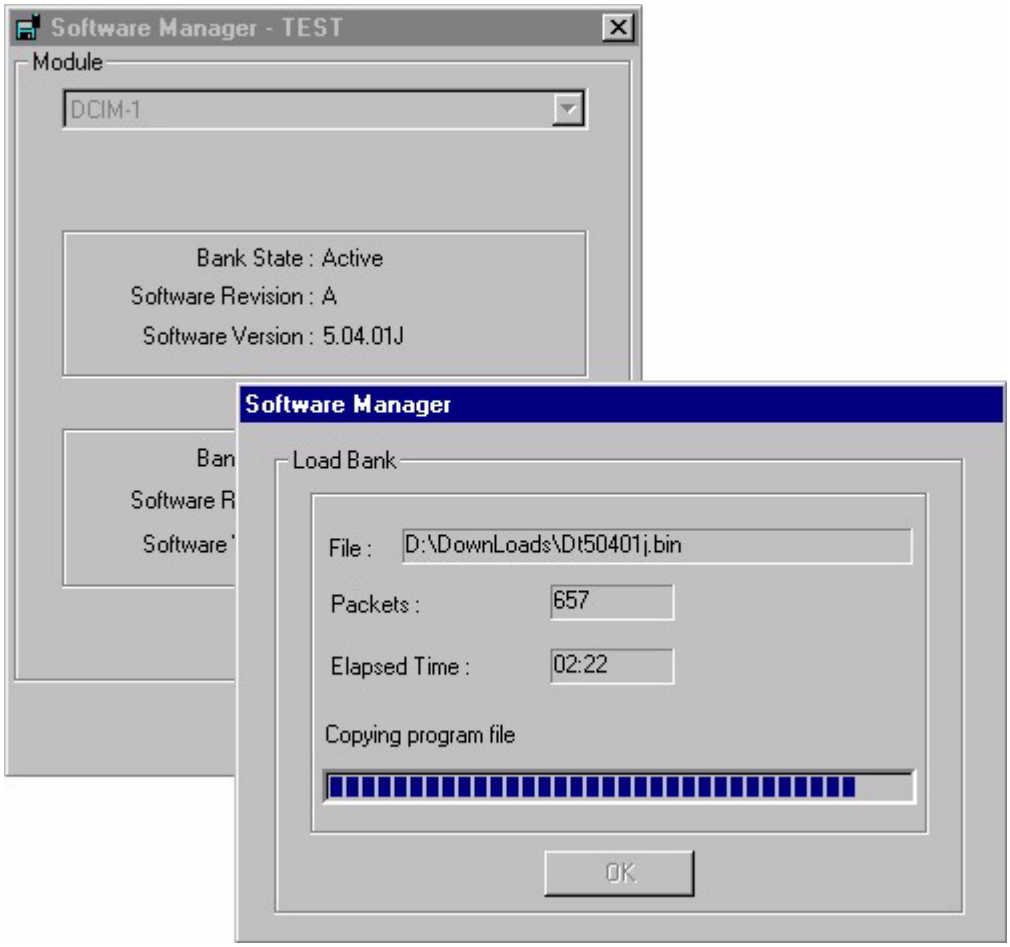

Figure 60 The Loading Progress Dialogue

Note: this application should not be terminated while an external program download is in progress.

Swapping Banks

From the Element Manager dialogue (Figure 56), select the *Swap Banks...* button to activate the currently inactive program bank. The dialogue box shown in Figure 61 will be displayed.

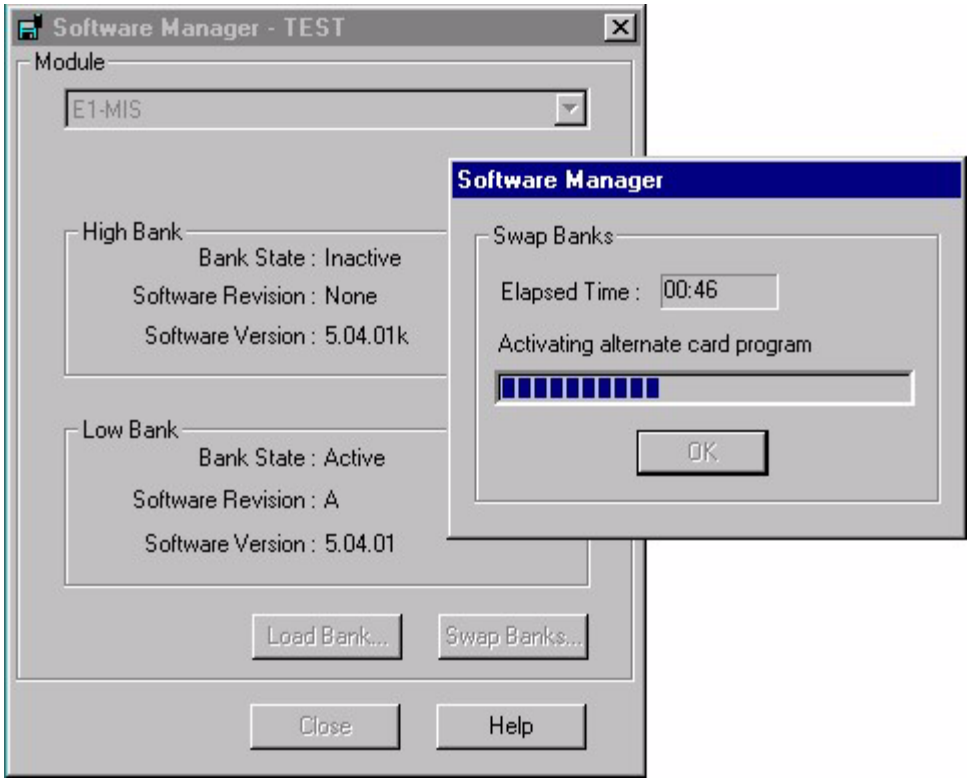

Figure 61 The Swapping Progress Dialogue

This operation will take approximately two and a half minutes to complete.

Note: this application should not be terminated while a swap operation is in progress.

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