

Configuration

The **Configuration** menu allows the access to several functions, including the first setup of the ADM-1, the configuration of protection, synchronisation and cross connections.

See Also:

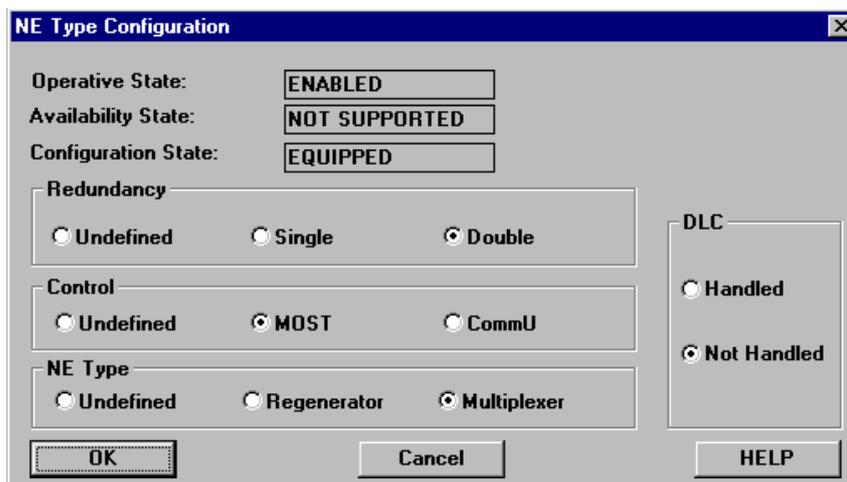
Alarm Attributes, Alarm Parameters, Cross Connections, Equipment Protection, Ground Contacts, MSP Protection , NE Configuration, NE Log, OSI Parameters Get, OSI Parameters Setup, Parking Status, Protection Parameters, Protection Role, Synchronisation, Summary LEDs Status

NE Configuration

(Configuration -> NE Type)

This menu item is used to set up the ADM-1 general parameters.

By selecting this item the **NE Type Configuration** window becomes accessible.



The **NE Type Configuration** window also displays the following information:

Operative State

indicating the operative state of the NE.

Availability State

indicating the state of the NE.

Configuration State

indicating the configuration state of the equipment.

1. Define the number of MOST Units present in the equipment, by checking the relevant **Redundancy** radio button.

The ADM-1 can be equipped with one or two MOST units. The system can be defined as:

Single

The equipment is equipped with only one MOST unit; the unit must be placed in the left most slot of the shelf.

Double

The equipment is fitted with two MOST units (double configuration).

Undefined

The equipment redundancy has not been defined yet.

2. Define the type of unit responsible for the management of DCC channels (MOST Unit or Communication Unit) by checking the relevant **Control** radio button.

The available options are:

MOST

The DCCs management is performed by the control circuits of the working MOST unit. Furthermore the equipment cannot be configured as Gateway.

CommU

The DCCs are managed by the Communication unit. This unit provides Q interface as well, for connecting the equipment to the Network Management Centre via Ethernet line. The equipment can be configured as Gateway.

Undefined

The DCC channels management has not been defined yet.

3. Define the NE configuration, by checking the relevant **NE type** radio button.

The ADM-1 can be configured as:

Regenerator

The equipment is used as regenerator with no access to the tributary side. Each MOST unit acts as a single regenerator, without using the switching matrix circuits.

Multiplexer

The equipment is used as Terminal Multiplexer, Add-Drop Multiplexer or Digital Cross Connect 4/1, with no access to the tributary side.

Undefined

The equipment configuration has not been defined yet.

4. Specify whether the ADM-1 is used or not to allow the access to a DLC from the NMC, by checking the relevant **DLC** radio button.

The available options are:

Handled

A DLC system is connected to the ADM-1 via V.11 interface.

Not Handled

The V.11 interface is not used.

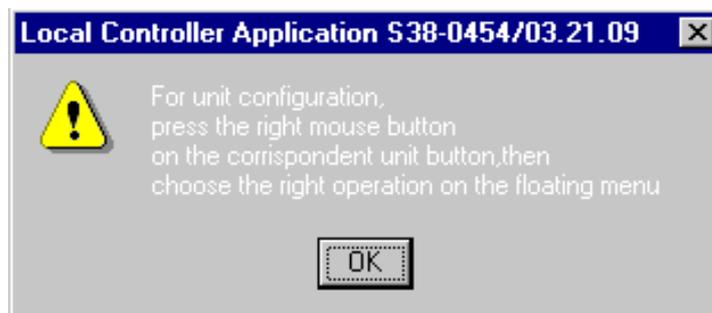
5. Confirm the settings by clicking on the **OK** button.

In the **Protection** menu, the following items are available:

Configuration of Unit

(Configuration -> Unit Configuration)

This menu item is used to display a window explaining the right procedure for configuring a unit.

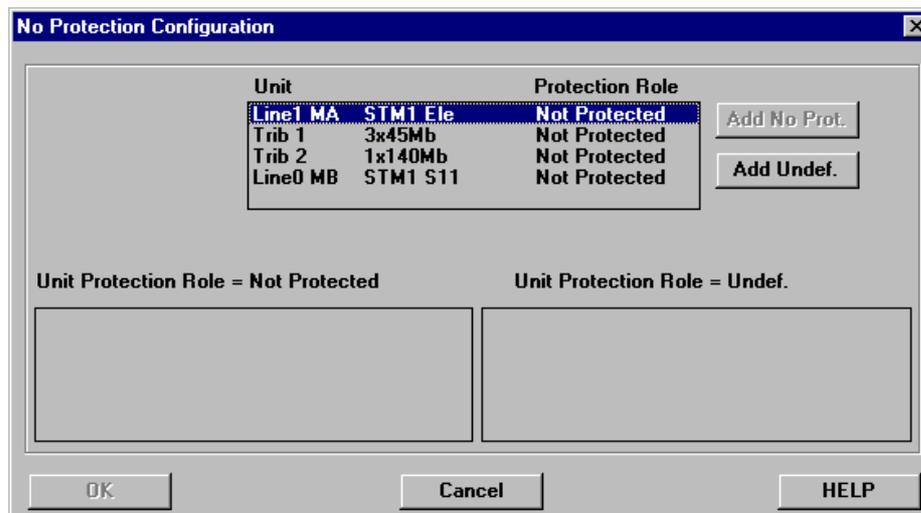


Protection Role

(Configuration -> Protection -> No Protection)

This function is used to modify the protection role of an unit (i.e. from *Undefined* to *Not Protected*).

By selecting this item, the **No Protection Configuration** window becomes accessible.



A list of the equipped units with their protection role is displayed. The **No Protection Configuration** window displays the following information:

Unit

displaying the unit identifier and type.

Protection Role

indicating the protection role assigned to each unit in the list.

The **No Protection Configuration** window allows to define the protection role (**Not Protected** or **Undefined**) of the units or sub-units. The default protection role is **Undefined**; a unit can be defined as **Undefined** when it will be configured as:

- ◆ WORKER or PROTECTION in a MSP protection scheme;
- ◆ WORKER or PROTECTION in an equipment protection scheme (according to the composition rules).

A unit can be defined as **Not Protected** when it will be configured as:

- ◆ WORKER unit in a MSP protection scheme;
- ◆ WORKER unit in a equipment protection scheme (according to the composition rules).

The protection role **Not Protected** must be assigned to a unit that will not be used in any protection scheme and a unit must be **Undefined** to be deleted.

NOTICE

The protection roles are automatically assigned to the units involved in MSP or equipment protection schemes; then it is not necessary to define the protection roles before creating the protection scheme.

To change the protection role of a unit:

1. Select the unit to be modified, by clicking on it in the list.
2. Change its protection role by clicking the relevant button (the **Add no Prot** for a unit with an *Undefined* protection role and the **Add Undef** for a unit with a *Not Protected* protection role).
3. The selected unit will be displayed in the field relevant to its new protection role.
4. For clearing the selection, double click on the unit displayed in the new protection role field. The unit will be set again in the selection list.
5. Confirm the new setting by clicking on the **OK** button.
6. To quit this window click on the **Cancel** button.

See Also:

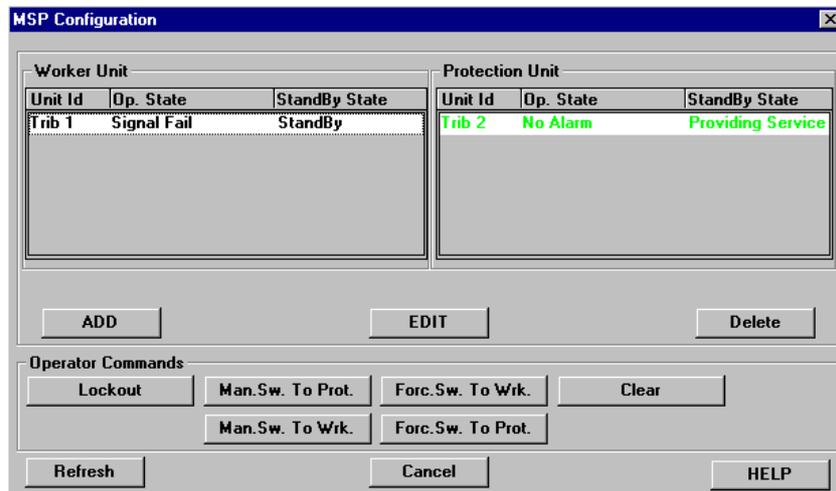
Equipment Protection, MSP Protection

MSP Protection

(Configuration -> Protection -> MSP Protection)

This function is used to create MSP protection pairs and to handle operation on them (i.e. Manual or Forced Switches).

By selecting this item, the **MSP Configuration** window becomes accessible.



The **MSP Configuration** window displays the following fields, with additional information about the state of working and protection lines:

Unit Id

displaying the unit identifier.

Op. State

indicating whether or not the line is available.

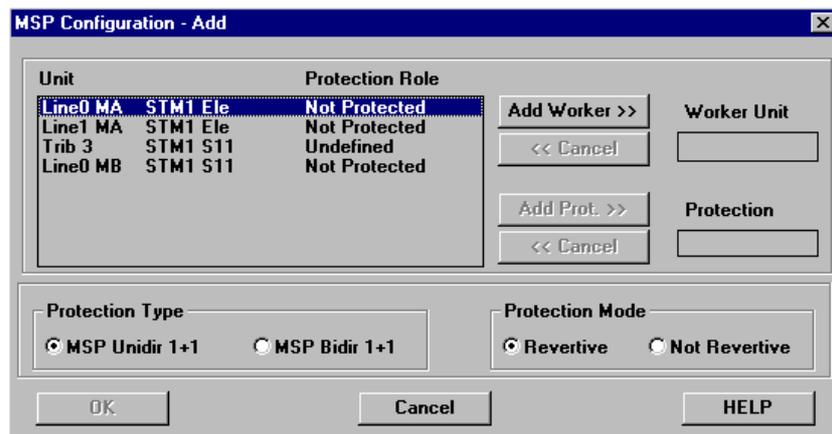
Standby State

indicating the state of the line.

To create an MSP protection:

1. Click on the **ADD** button.

The **MSP Configuration - Add** window becomes accessible.



This window displays the following information:

Unit

displaying the unit identifier and type.

Protection Role

indicating the protection role assigned to each units in the list.

2. Select the **Worker** line, by clicking on it in the list.

3. Click on the **Add Worker >>** button.

The **Worker** line will appear in the uppermost field.

4. Select the **Protection** line, by clicking on it in the list.

5. Click on the **Add Prot. >>** button.

The **Protection** line will appear in the lowermost field.

6. Define the MSP protection type (Unidirectional or Bidirectional) by checking the relevant radio button.

7. Define the MSP protection mode (Revertive or Not Revertive) by checking the relevant radio button.

8. Confirm the selection, by clicking on the **OK** button.

The working line will be displayed in a green colour.

----- A unit must have an Undefined protection role, to be used as protection in an MSP pair.

To modify the settings of an existing MSP protection pair:

1. Select the MSP pair to be configured, in the **MSP Configuration** window, by clicking on one of the two lines of the pair.

2. Click on the **EDIT** button.

The **MSP Protection - Edit** window becomes accessible.

The **MSP Protection - Edit** window displays the following fields, with additional information about the state of working and protection lines:

Unit

displaying the unit identifier.

Op. State

indicating whether or not the line is available.

Standby State

indicating the state of the line.

Protection Type

indicating the type of MSP protection.

Protection State

indicating whether or not protection switches have been performed.

3. Select the new value for the protection mode (Revertive or Not Revertive), by checking the relevant radio button.
4. Confirm the new configuration by clicking on the **OK** button.

To remove an existing MSP protection:

1. Select the MSP pair to be deleted, in the **MSP Configuration** window, by clicking on one of the two lines of the pair.
2. Click on the **DELETE** button.
3. It is also possible to delete the MSP pair by double clicking on one of the two lines of the pair.

See Also:

MSP Switch Operations, Protection Parameters, Protection Role

MSP Switch Operations

To perform a Forced Switch:

1. Select the MSP pair on which the switch has to be performed, in the **MSP Configuration** window, by clicking on one of the two lines of the pair.
2. To switch from the *worker* to the *protection* line, click on the **Forc. Sw. To Prot.** button.
3. To switch from the *protection* to the *worker* line, click on the **Forc. Sw. To Wrk.** button.

In this case the system executes anyway the switch to the new providing service line. If a line to which a Forced Switch has been performed, gets failed, no switch to the other one (even if it is available) takes place.

To perform a Manual Switch:

1. Select the MSP pair on which the switch has to be performed, in the **MSP Configuration** window, by clicking on one of the two lines of the pair.
2. To switch from the *worker* to the *protection* line, click on the **Man. Sw. To Prot.** button.
3. To switch from the *protection* to the *worker* line, click on the **Man. Sw. To Wrk.** button.

In this case the switch is not performed if the selected line is not available.

To perform a Forced Switch:

1. Select the MSP pair on which the switch has to be performed, in the **MSP Configuration** window, by clicking on one of the two lines of the pair.
2. To switch from the *worker* to the *protection* line, click on the **Man. Sw. To Prot.** button.
3. To switch from the *protection* to the *worker* line, click on the **Man. Sw. To Wrk.** button.

In this case the switch is performed even if the selected unit is afflicted by errors or alarms.

To disable the use of the protection line :

1. Select the MSP pair by clicking on it.
2. Click on the **Lockout** button.

To clear from a switch operation or a lockout operation:

1. Select the MSP pair on which the switch or a lockout has been performed, in the **MSP Configuration** window, by clicking on one of the two lines of the pair.
2. Click on the **Clear** button.

To Update the MSP Configuration Window:

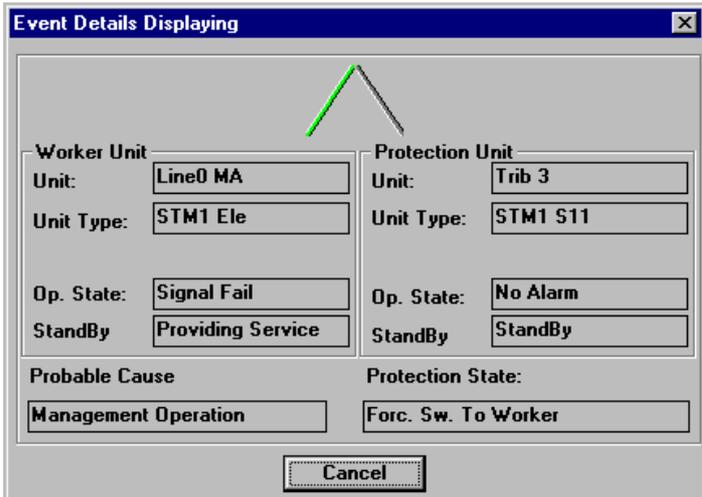
1. Click on **Refresh** button. The window is updated to the current state.

To perform exercise operations

1. Functionality not implemented yet.

MSP Protection Switch (Event Details)

All the switches connected to an MS Protection pair generate an event **MSP Protection Switch**, in the Event Monitor Window and in the NE LOG. By double clicking on this event the **Event Details Displaying** window is displayed.



Worker Unit		Protection Unit	
Unit:	Line0 MA	Unit:	Trib 3
Unit Type:	STM1 Ele	Unit Type:	STM1 S11
Op. State:	Signal Fail	Op. State:	No Alarm
StandBy:	Providing Service	StandBy:	StandBy
Probable Cause:	Management Operation	Protection State:	Forc. Sw. To Worker

This window is used to display additional information about the MSP switch that has taken place, by means of the following fields:

Unit

displaying the unit identifier.

Unit Type

displaying the unit type.

Op. State

indicating whether or not the line is available.

Standby

indicating the state of the line.

Probable Cause

indicating the cause of the switch.

Protection State

indicating the state of the switch.

The green line indicates which unit the traffic has been switched to.

See Also:

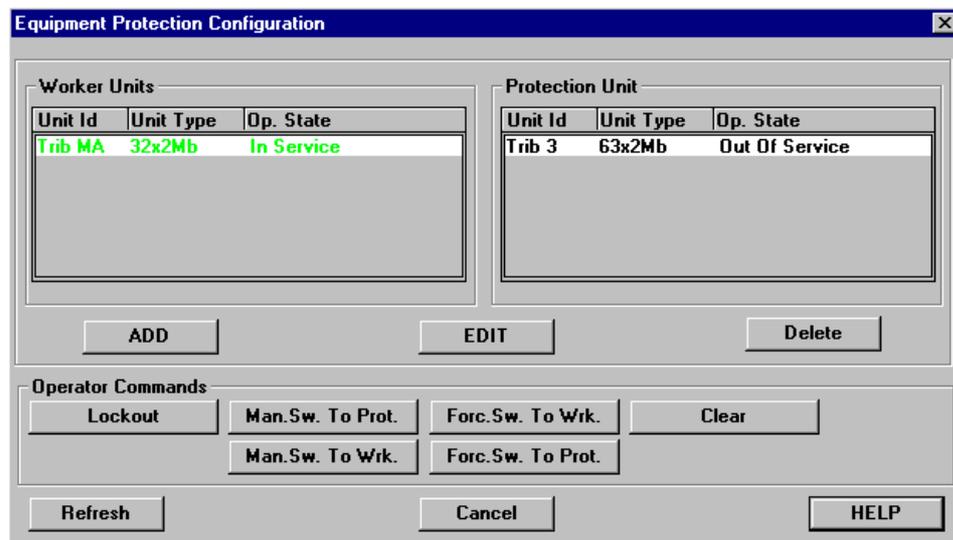
Alarm and Event Monitor Window, MSP Protection, NE Log

Equipment Protection

(Configuration -> Protection -> Equipment Protection)

This function is used to create Equipment protection groups and to handle operation on them (i.e. Manual or Forced Switches).

By selecting this item, the **Equipment Protection Configuration** window becomes accessible.



The **Equipment Protection Configuration** window also displays the following field, with additional information about the state of working and protection units:

Unit Id

displaying the unit identifier.

Unit Type

displaying the unit type.

Op. State

indicating whether or not the unit involved in the protection group is available.

To create an Equipment protection:

1. Click on the **ADD** button.

The **Equipment Protection Configuration - Add** window becomes accessible.

Unit	Protection Role	Worker Unit
Trib MA	32x2Mb	Undefined
Trib 1	3x34Mb	Not Protected
Trib 2	3x34Mb	Not Protected
Trib 3	3x34Mb	Undefined

Protection Type: 1:1 1:2

Protection Mode: Revertive Not Revertive

This window displays the following information:

Unit

displaying the unit identifier and type.

Protection Role

indicating the protection role assigned to each units in the list.

2. Select the **Worker** unit, by clicking on it in the list.
3. Click on the **Add Worker >>** button.

The **Worker** unit will appear in the uppermost field.

4. Automatically the proper **Protection** unit, is displayed in the lowermost field. In case of 2Mbit/s units or sub-units, the **Protection** unit is automatically selected by the Local Controller as Tributary Unit 3.
5. Define the Equipment protection mode (Revertive or Not Revertive) by checking the relevant radio button.
6. The protection type (1:1 or 1:2) is automatically selected. In case of protection between one 32x2Mb MOST Tributary and one 63x2Mb Tributary it will be 1:1. When the second 32x2Mb MOST Tributary will be selected for being part of the same protection group, the 1:2 protection type will be automatically selected.
7. Confirm the selection, by clicking on the **OK** button.

The working unit will be displayed in a green colour.

----- A unit must have an Undefined protection role, to be used as protection in an Equipment protection group. To perform a 1:2 equipment protection type, the protection unit must have already **Protection** as protection role.

To modify the settings of an existing Equipment protection group:

1. Select the Equipment Protection group to be configured, in the **Equipment Protection Configuration** window, by clicking on one of the units of the group.
2. Click on the **EDIT** button.
The **Equipment Protection Configuration - Edit** window becomes accessible.
3. Select the new value for the protection mode (Revertive or Not Revertive), by checking the relevant radio button.
4. Confirm the new configuration by clicking on the **OK** button.

To remove an existing Equipment protection:

1. Select the Equipment Protection group to be deleted, in the **Equipment Protection Configuration** window, by clicking on one of the units of the group.
2. Click on the **DELETE** button.

See Also:

Equipment Protection Switch Operations, Protection Parameters, Protection Role

Equipment Protection Switch Operations

To perform a Manual Switch:

1. Select the Equipment Protection group on which the switch has to be performed, in the **Equipment Protection Configuration** window, by clicking on one of the units of the group.
2. To switch from the *worker* to the *protection* unit, click on the **Man. Sw. To Prot.** button.
3. To switch from the *protection* to the *worker* unit, click on the **Man. Sw. To Wrk.** button.

In this case the switch is not performed if the selected unit is not available.

To perform a Forced Switch:

1. Select the Equipment Protection group on which the switch has to be performed, in the **Equipment Protection Configuration** window, by clicking on one of the units of the group.
2. To switch from the *worker* to the *protection* unit, click on the **Forc. Sw. To Prot.** button.
3. To switch from the *protection* to the *worker* unit, click on the **Forc. Sw. To Wrk.** button.

In this case the system executes anyway the switch to the new providing service unit. If a unit which a Forced Switch has been performed to, gets failed, no switch to the other one (even if it is available) takes place.

To disable the use of the protection:

1. Select the equipment protection group, by clicking on one of the unit of the group.
2. Click on the **Lockout** button.

To clear a switch operation or a lockout operation:

1. Select the Equipment Protection group on which the switch or a lockout has been performed, in the **Equipment Protection Configuration** window, by clicking on one of the unit of the group.
2. Click on the **Clear** button.

To update the Equipment Protection Window:

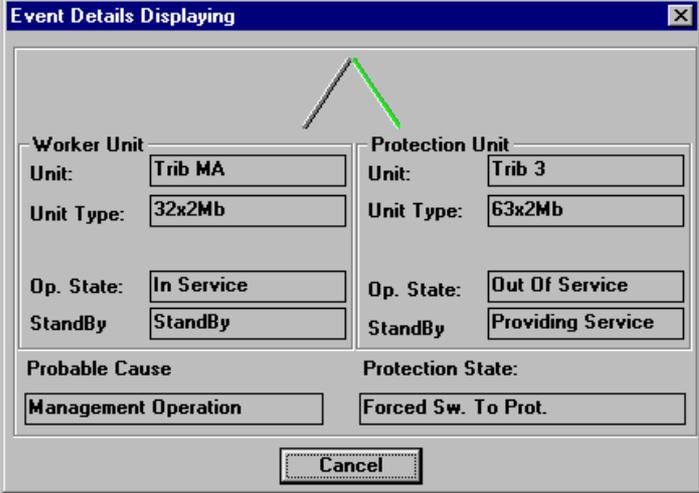
1. Click on the **Refresh** button. The window is updated to the current state.

To perform exercise operations:

1. Functionality not implemented yet.

Eqt Protection Switch (Event Details)

All the switches connected to an Equipment Protection group generate an event **Eqt Protection Switch**, in the Event Monitor Window and in the NE LOG. By double clicking on this event the **Event Details Displaying** window is displayed.



Worker Unit		Protection Unit	
Unit:	Trib MA	Unit:	Trib 3
Unit Type:	32x2Mb	Unit Type:	63x2Mb
Op. State:	In Service	Op. State:	Out Of Service
StandBy:	StandBy	StandBy:	Providing Service
Probable Cause:	Management Operation	Protection State:	Forced Sw. To Prot.

Cancel

This window is used to display additional information about the Equipment Protection switch that has taken place, by means of the following fields:

Unit

displaying the unit identifier.

Unit Type

displaying the unit type.

Op. State

indicating whether or not the unit involved in the protection group is available.

Standby

indicating the state of the unit.

Probable Cause

indicating the cause of the switch.

Protection State

indicating the state of the switch.

The green line displays which unit the traffic has been switched to.

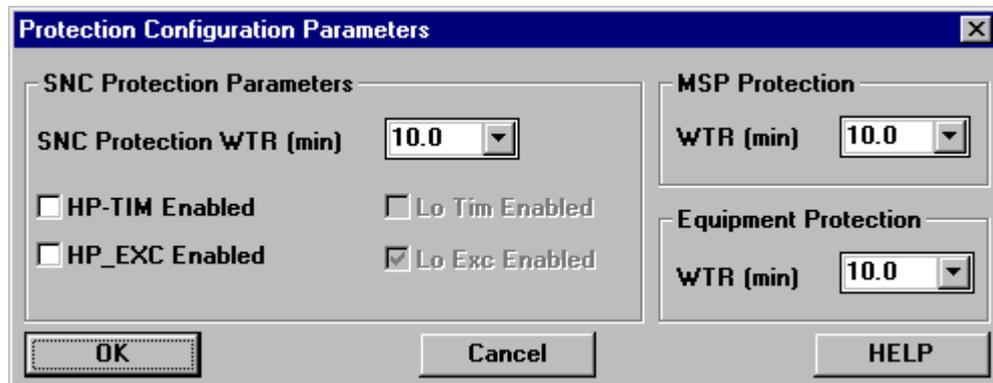
See Also:

Alarm and Event Monitor Window, Equipment Protection, NE Log

Protection Parameters

(Configuration -> Protection -> Protection Parameter)

By selecting this item, the **Protection Parameter Configuration** window becomes accessible.



This window is used to modify the parameters relevant to MSP, Equipment and SNCP protection.

To configure the SNCP protection:

1. Set the Wait To Restore Time (expressed in minutes from 0.5 to 30 with 0.5 step), by using the relevant scroll list. This is the time waited by the system before switching back to the main path, once it becomes available again.
2. Enable the use of additional switching criteria (HP TIM, HP EXC, LP TIM, LP EXC) by checking the relevant check box. These criteria can be used in addition to the following ones:
 - ◆ AU or TU AIS
 - ◆ AU or TU LOP

----- LO TIM is always disabled and can not be modified.

LO EXC is always enabled and can not be modified.

To configure the MSP or Equipment protection:

1. Set the Wait To Restore Time (expressed in minutes from 1 to 30 with 0.5 step), by using the relevant scroll list. This is the time waited by the system before switching back to the main line or unit, once it becomes available again.

See Also:

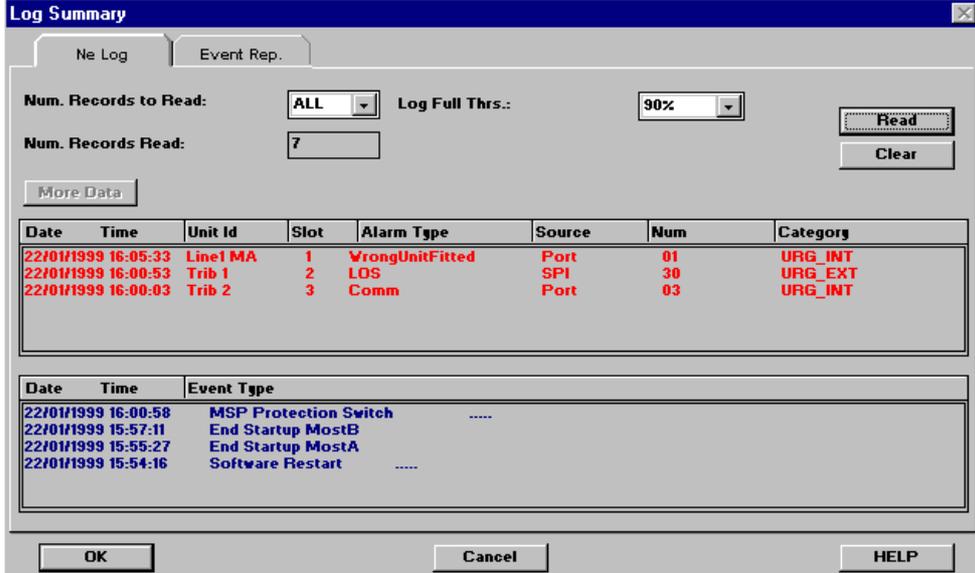
Equipment Protection, MSP Protection, SNC Protection

----- The WTR is applicable for revertive protection schemes only.

NE Log

(Configuration -> Fault -> NE Log -> NE Log)

This menu item makes available the whole list of the alarms/events stored in equipment.



The screenshot shows a 'Log Summary' window with two tabs: 'Ne Log' and 'Event Rep.'. The 'Ne Log' tab is active. It contains the following fields and controls:

- Num. Records to Read:** A dropdown menu set to 'ALL'.
- Log Full Thrs.:** A dropdown menu set to '90%'.
- Num. Records Read:** A text input field containing the number '7'.
- Buttons:** 'Read', 'Clear', and 'More Data'.

Below the controls are two tables:

Date	Time	Unit Id	Slot	Alarm Type	Source	Num	Category
22/01/1999	16:05:33	Line1 MA	1	WrongUnitFitted	Port	01	URG_INT
22/01/1999	16:00:53	Trib 1	2	LOS	SPI	30	URG_EXT
22/01/1999	16:00:03	Trib 2	3	Comm	Port	03	URG_INT

Date	Time	Event Type
22/01/1999	16:00:58	MSP Protection Switch
22/01/1999	15:57:11	End Startup MostB
22/01/1999	15:55:27	End Startup MostA
22/01/1999	15:54:16	Software Restart

At the bottom of the window are 'OK', 'Cancel', and 'HELP' buttons.

This window displays the following information, relevant to the active alarms and/or the events that have occurred.

Unit Id

displaying the unit identifier.

Slot

indicating the unit subrack position.

Alarm Type

indicating the alarm type.

Source

indicating the alarm source.

Num

The number meaning depends by the relevant Unit Id.

Category

displaying the alarm category.

Event Type

displaying the event type that has occurred.

----- For further information about the possible contents of the fields **Alarm Source** and **Alarm type**, refer to chapter "Fault Detection Procedure" of this handbook.

For the events is displayed their type and the time of their insurgency.

By clicking on the **Read** button the alarm/event logs, relevant to the whole equipment, can be displayed.

The **Reset** button can be used to erase the alarm/event logs.

The NE Log can be configured as follows:

- 1.** Select the number of alarms/events to be displayed, by using the **Num. Record to Read** scroll list.
- 2.** Define the **Log Full Thrs.**, by using the relevant scroll list. This number represents the occupied percentage of the alarm/event log, necessary to issue spontaneously a *Log Full* indication in the event monitor window and in the **NE Log**.

If the RAM of the PC is not enough to store all the records of the log, the remaining records can be read by clicking on the **More Data** button.

----- The maximum number of alarms/events that the system can store is 1000. Once reached the maximum capacity, the system will overwrite on the latest entries (FIFO).

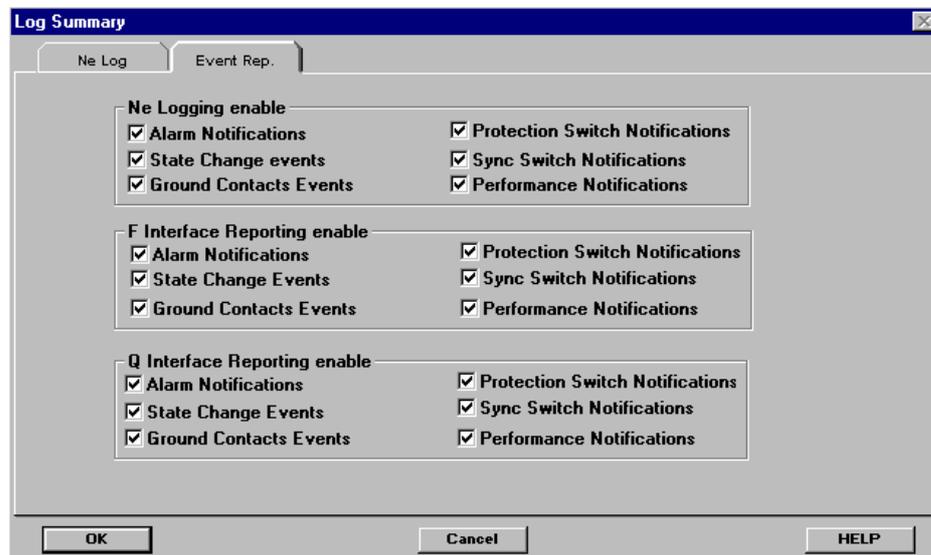
See Also:

Alarm Attributes, Alarm and Event Monitor Window, Alarm Monitoring, Event Report, Unit Active Alarms

Event Report

(Configuration -> Fault -> NE Log -> Event Rep.)

This menu item is used to enable the reporting of alarms and events on NE Log, F interface (Control Application) or Q interface (NMC).



For each one of these interfaces, the following reporting can be enabled:

- ◆ Changes in the alarm state.
- ◆ Changes in the state of internal parameters (i.e. change of lamp state, activation of parking mode, etc.).
- ◆ Changes in the state of incoming ground contacts.
- ◆ Notification of any protection or synchronisation source switch.
- ◆ Notification of each crossing of performance thresholds.

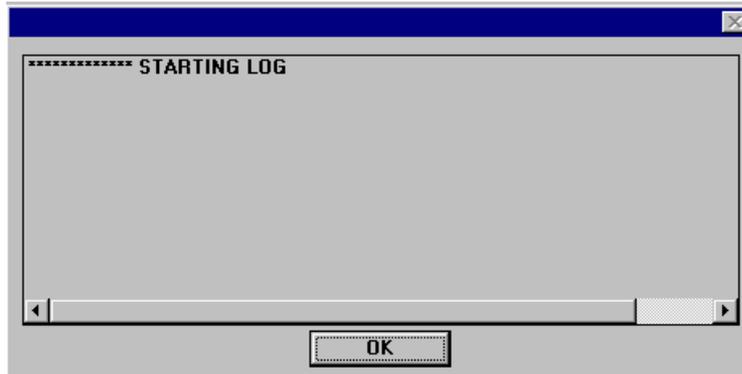
See Also:

Alarm Attributes, Alarm and Event Monitor Window, Alarm Monitoring, NE Log, Unit Active Alarms

LC Log

(Configuration -> Fault -> LC Log)

This menu item is used to display the name of an eventual errored file and where the error is.

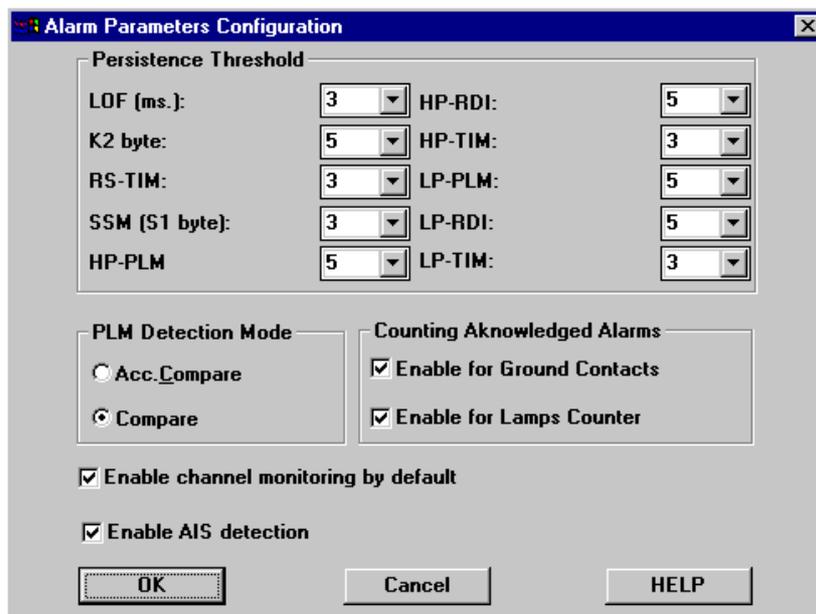


Alarm Parameters

(Configuration -> Fault -> Alarm Parameters)

This item is used to define the time (or the number of frames) waited by the equipment before considering correct the value of some overhead bytes.

By selecting this item the **Alarm Parameters Configuration** window will be displayed.



To configure the alarm parameters:

- 1.** Select the Alarm detection algorithm used for the Payload Label Mismatch alarm, by checking one of the two **PLM Detection Mode** radio buttons (by selecting the **Compare** mode, the check is performed between the received value of the C2 byte and the expected one; by selecting the **Acc_Compare** mode, the received C2 byte is compared to the expected one, whenever its value is constant for 5 frames)
- 2.** The option "**Enable for Ground Contacts**", in the "**Counting of the Acknowledge Alarms**" area, offers the possibility to enable/disable the alarm LED indications on the MOST Unit and on the ground contacts in case of acknowledged alarm.
- 3.** The option "**Enable for Lamps Counter**", in the "**Counting of the Acknowledge Alarms**" area, offers the possibility to enable/disable the LED indication by means of the six configurable LEDs in the local controller graphical area, in case of acknowledge alarm.

----- e.g. In case of LOS alarm, the URG and EXT alarms are displayed on the local controller graphical area and the URG and EXT LEDs are illuminated on the MOST front panel; the red lamp on the R.A.U. is also illuminated and the URG and EXT ground contacts are sent to the connector.
By acknowledging the alarm, the red lamp on the R.A.U. will be switched off while the yellow lamp will be switched on. The URG and EXT indications on the Local Controller, on the MOST front panel and as ground contacts, can be either switched off or can be left on according respectively to the disable/ enable configuration in the Counting Acknowledged Alarms area.
- 4.** Configure the persistence time of different overhead bytes and event.

The following persistence times are accessible:

LOF (A1 and A2 bytes)
expressed in milliseconds (from 0 to 3 default 3)

K2 bytes
expressed in frames (from 3 to 5 default 5)

RS - TIM Regenerator Section Trace Identifier Mismatch (byte J0 of SOH)
expressed in frames (from 3 to 5 default 3)

S1 byte
expressed in frames (from 1 to 5 default 3)

HP - PLM High Path Payload Label Mismatch (byte C2)
expressed in frames (from 3 to 5 default 5)

HP - RDI High Path Remote Defect Indication (bits 5-7 of byte G1)
expressed in frames (from 3 to 5 default 5)

HP - TIM High Path Trace Identifier Mismatch (byte J1 of HO POH)
expressed in frames (from 3 to 5 default 3)

LP - PLM Low Path Payload Label Mismatch (bits 5-7 of byte V5)
expressed in frames (from 3 to 5 default 5)

LP - RDI Low Path Remote Defect Indication (bit 8 of byte V5)
expressed in frames (from 3 to 5 default 5)

LP - TIM Low Path Trace Identifier Mismatch (byte J2)
expressed in frames (from 3 to 5 default 3)

- 5.** The options "**Enable channel monitoring by default**" and "**Enable AIS detection**", enable the default channel monitoring and the detection of AIS Alarm.
- 6.** Click on the **OK** button to confirm the configuration.

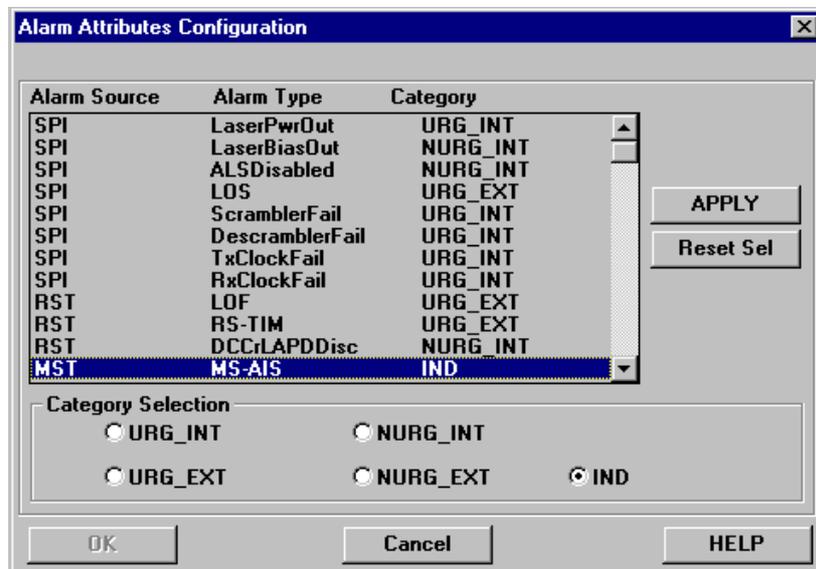
See Also:

Alarm Attributes, Alarm and Event Monitor Window, Alarm Monitoring, NE Log, Unit Active Alarms

Alarm Attributes

(Configuration -> Fault -> Alarm Attributes)

This item is used to modify the category settings for all the alarms managed by the ADM-1.



All the alarms are listed and the window displays the following information:

Alarm Source

indicating the alarm source.

Alarm Type

indicating the alarm type.

Category

indicating the alarm category.

----- For further information about the possible contents of the fields **Alarm Source** and **Alarm type**, refer to chapter "Fault Detection Procedure" of this handbook.

To configure the alarm attributes:

1. Select an alarm root, by using the scroll list
2. Define the category of the selected alarm, by checking one of the **Category Selection** radio buttons.
3. Click on the **APPLY** button to validate the new configuration.

The **Reset Sel** button is used to restore the alarm default configuration.

----- The default configuration can be recovered before clicking on **OK** button. After the **OK** has been selected the default configuration will not be recovered any more.

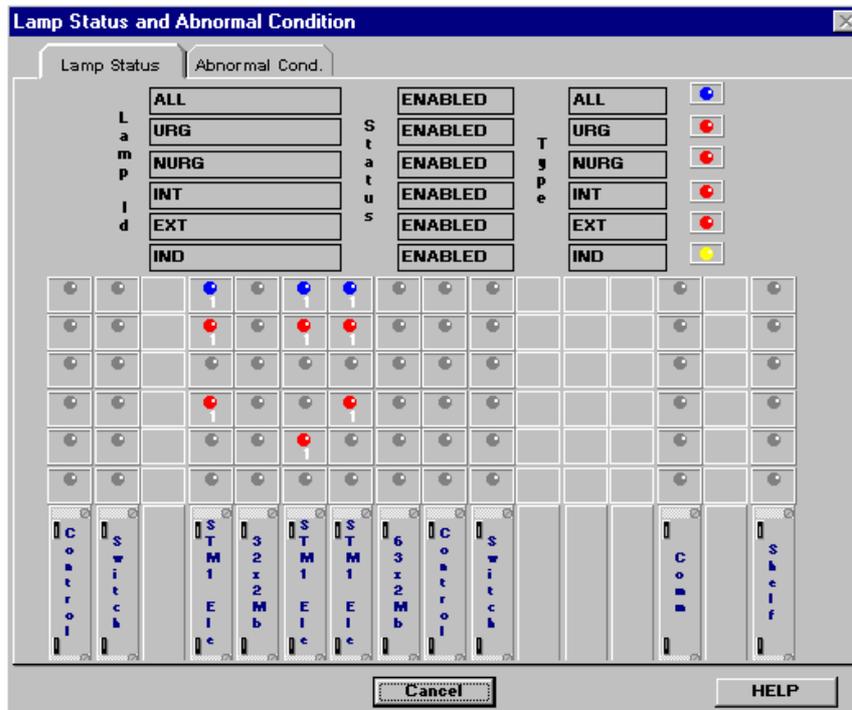
See Also:

Alarm and Event Monitor Window, Alarm Monitoring, Alarm Parameters, NE Log, Unit Active Alarms

Summary LEDs Status

(Configuration -> Fault -> Lamps Status, Abnormal Condition -> Lamp Status)

This item is used to display the distribution on the different units of the alarms summarised in the LEDs on the main window.



Nothing can be configured in this window. For each customised LED, the units responsible for the active alarms, with the number of alarms present on each unit are displayed.

The meaning of the unit alarms indication is the same as shown in the fields **type** in the upper part of the window.

See Also:

The Graphical Area

Abnormal Condition

(Configuration -> Fault -> Lamps Status, Abnormal Condition -> Abnormal Cond.)

This item is used to display the conditions which generate an Abnormal Condition.

Worker Unit	Protection Unit	Protection Type	MSP Condition Type
Line1 MA	Line0 MA	MSP Unidirectional	Forced Switch To Protection

Unit Id	Unit Type	Loopbacks Num
Trib MA	32x2Mb	1
Trib 1	STM1 Ele	1

Unit Id	Unit Type	Status
Line0 MA	STM1 S11	-

This window is used to display additional information about the active abnormal condition, by means of the following fields:

Unit Id

displaying the unit identifier.

Unit Type

displaying the unit type.

Worker Unit

displaying the unit identifier of the worker unit involved in a MSP protection scheme.

Protection Unit

displaying the unit identifier of the protection unit involved in a MSP protection scheme.

Loopbacks Num

displaying the port number where the loopback has been enabled.

MSP Condition Type

displaying the abnormal condition type relevant to the units involved in MSP protection scheme.

Status

displaying that the ALS in the has been disabled in the indicated optical interface.

Nothing can be configured in this window. This folder is divided into three groups as **MSP Lockout Condition**, **Loopbacks On ...** and **Automatic Laser Shutdown On...**, where the units and additional information, responsible for the ABN condition, are displayed as follows:

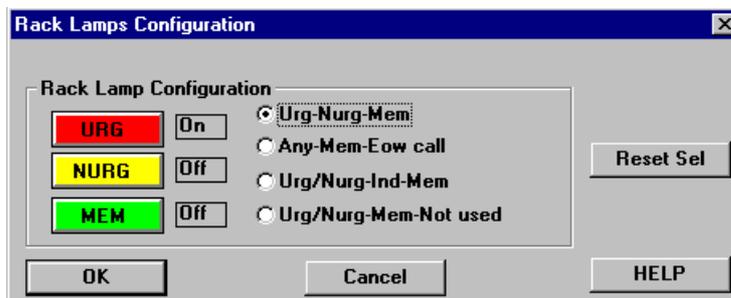
- ◆ **MSP Lockout Condition**
Shows for the MSP pairs the Forced or Lockout conditions.
- ◆ **Loopbacks on...**
Shows the list of the ports in loopback condition.
- ◆ **Automatic Laser Shutdown On...**
Shows the optical units where the Automatic Laser Shutdown has been disabled.

Rack Lamp Configuration

(Configuration -> Fault -> Rack lamps)

To customise the rack alarm configuration:

1. Select the push button representing the rack lamp and then assign the relevant alarm criteria by clicking on the correspondent radio button.



The following selections are available:

- ◆ Urg - Nurg - Mem Used for three-lamp Rack Alarm Unit (R.A.U.)
Left = Urgent
Middle = Non Urgent
Right = Acknowledgement
- ◆ Any - Mem - Eow call Used for three-lamp R.A.U.
Left = Any alarm
Middle = Eow call
Right = Acknowledgement

- ◆ Urg/Nurg - Ind - Mem Used for three-lamp R.A.U
Left = Urgent / Not Urgent
Middle = Indicative
Right = Acknowledgement
- ◆ Urg/Nurg - Mem - Not Used Used for two-lamp R.A.U
Left = Urgent and Not Urgent
Middle = Not used
Right = Acknowledgement

Ground Contacts

(Configuration -> Fault -> Ground Contacts)

This item is used to check the state of the four incoming ground contacts and to configure three of the outgoing ones.

By selecting this item, the **Alarm Summary** window will be displayed.

The screenshot shows the 'Alarm Summary' window with the following sections:

IN Ground Contacts Configuration

Status	Ev. Reporting	Iden	Alarmed when	
1	<input checked="" type="checkbox"/> Enable	OPEN DOOR	<input checked="" type="radio"/> Open	<input type="radio"/> Close
2	<input checked="" type="checkbox"/> Enable	HIGH TEMP	<input type="radio"/> Open	<input checked="" type="radio"/> Close
3	<input type="checkbox"/> Enable		<input type="radio"/> Open	<input checked="" type="radio"/> Close
4	<input type="checkbox"/> Enable		<input type="radio"/> Open	<input checked="" type="radio"/> Close

OUT Ground Contacts and MOST LED's

Alarm Type	Status	# Alarm
MEM	Off	0
1 URG	On	3
2 NURG	On	2
3 EXT	On	3
4 INT	On	2
5 IND	Off	0
ABN	Off	0

Config Mode 6

Config Mode: Driven, Linked IN GC, AI Type

Id: PROYA 1

Driven Open: Driven Close:

Config Mode 7

Config Mode: Driven, Linked IN GC, AI Type

Alarm Type: IN GC 1

Id: [Empty]

Open: Close:

Config Mode 8

Config Mode: Driven, Linked IN GC, AI Type

Alarm Type: TRIB 2Mb

Status: Off # Alarm: 0

----- For further information about the possible contents of the field **Alarm type**, refer to chapter "Fault Detection Procedure" of this handbook.

To configure the input ground contacts:

1. Check the **Ev. Reporting** check box, to enable the management of the selected input ground contacts, in the **IN Ground Contacts Configuration** area.

In the **Status** field it is displayed the current status of the selected input ground contact (in red colour if the relevant alarm is active, in blue colour if it is not active).

2. Define an **Identifier** for the incoming ground contact (that is a description of its cause), by writing in the relevant text field (max. 12 characters).
3. Define whether the ground contact is active when open or when closed, by checking the relevant **Alarmed when** check box.

The lower left part of this window displays the seven MOST LEDs. Five of these LEDs are also used as output ground contacts (URG, NURG, INT, EXT, IND) and their meanings cannot be modified.

On the lower right part of the window are available the remaining three output ground contacts, which can be customised.

To customise the output ground contacts:

1. Select one of the three ground contacts from 6 to 8, which are the only accessible to the operator, in the **OUT Ground Contacts and MOST LEDs** area. These outgoing ground contacts can be configured by checking the **Config Mode** areas. The available configuration mode are:

Driven

the outgoing ground contact is driven by the operator.

Linked IN GC

the outgoing ground contact reports the status of an incoming ground contact; by using the **Alarm Type** scroll list, the incoming ground contact can be selected.

AI Type

the outgoing ground contact reports the status of a system alarm type; by using the **Alarm Type** scroll list, the alarm type can be selected.

Parking Status

(Configuration -> Fault -> Parking)

This item is used to disable the use of the LEDs on the front panel of the MOST unit. Once the equipment enters the *Parking* status, all the LEDs on the MOST unit are switched off and the alarm reporting is disabled.

To restore the use of MOST LEDs select again the **Parking** item.



Synchronisation

(Configuration -> Sync Configuration)

This item allows the management of the synchronisation sources used for the equipment and of the sources used as external clock references.

See Also:

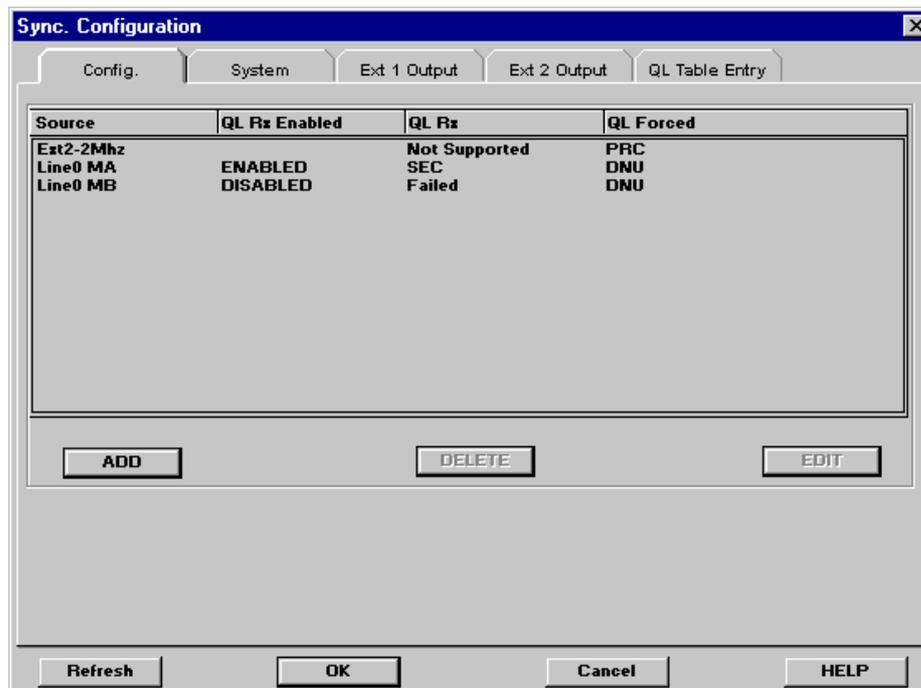
Equipping Synchronisation Sources, QL Table Entry, System Synchronisation Sources

Equipping Synchronisation Sources

(Configuration -> Sync Configuration -> Config.)

This function is used to define the possible synchronisation sources used by the ADM-1.

By clicking on the **Config.** button, on the top of the **Sync.Configuration** window, the following folder becomes accessible.



The main element of this window is a list of the equipped synchronisation sources, with their quality level, their state and their priority.

For each defined synchronisation source, the **Configuration** folder makes available the following information:

Source

displaying the defined source identifier.

QL Rx Enabled

indicating if the checking on the received S1 byte is performed or not (this information is not displayed in case of PDH or 2MHz sources).

QL Rx

indicating the value of the received S1 byte.

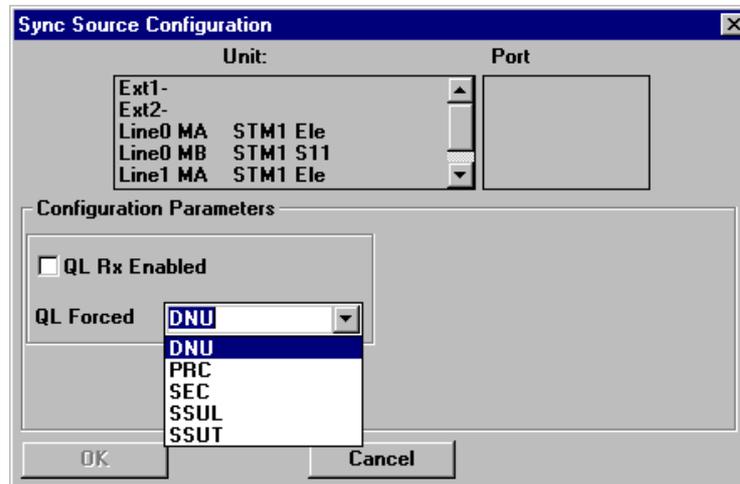
QL Forced

indicating the value of the assigned quality level. This information is displayed in case of PDH signal, 2MHz signal and STM-1 signals (this information is meaningful when the checking on the received S1 byte is disabled).

To equip a new synchronisation source:

1. Click on the **ADD** button.

The **Sync Source Configuration** will be displayed.



This window, as the following of the same appearance, displays the following information:

Unit

displaying the unit identifier and type.

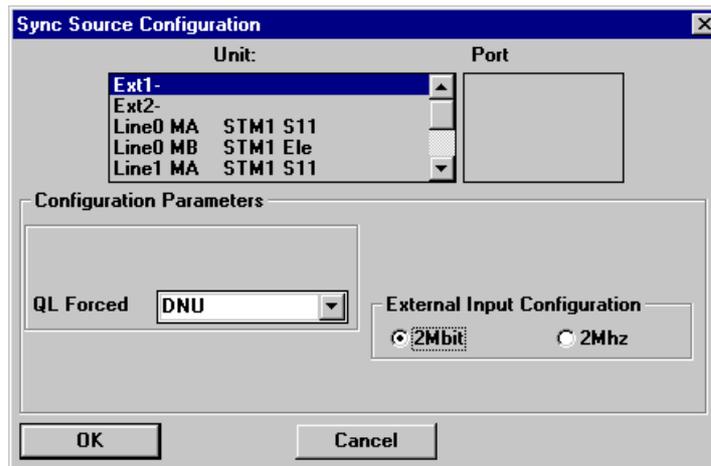
Port

displaying the selected unit port.

2. Select the unit or the input to be used as synchronisation source, by clicking on it in the list.

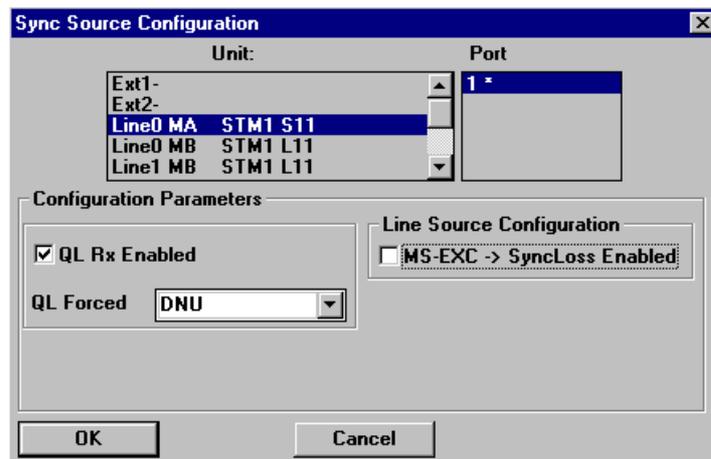
Different parameters can be configured depending on the selection done

To configure an external source:



1. Specify the type of used external clock reference (2Mbit/s or 2MHz) by checking the relevant radio button.
2. Select by the scroll list the forced quality level to assign to the external reference clock. The following quality levels can be selected:
 - ◆ DNU = Do Not Use
 - ◆ PRC = Primary Reference Clock
 - ◆ SSUT = Synchronisation Supply Clock Transit
 - ◆ SSUL = Synchronisation Supply Clock Local
 - ◆ SEC = SDH Equipment Clock
3. Confirm the configuration by clicking on the **OK** button.

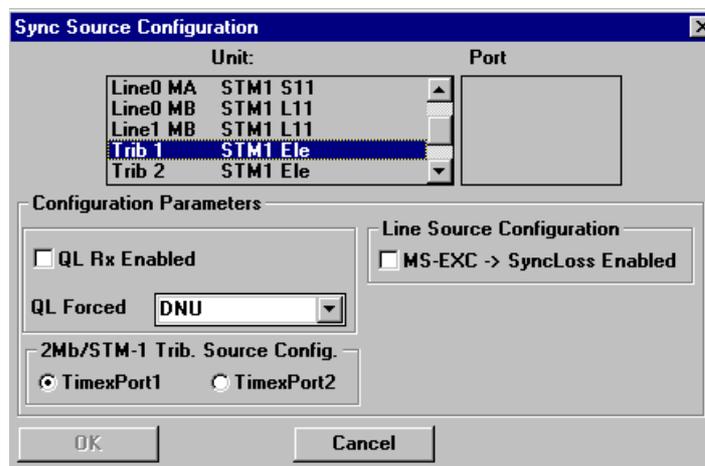
To configure an STM-1 line as a source:



1. Select the port to be used as synchronisation source, by clicking on it in the list.

2. Enable (or not) the check on the S1 byte of the incoming STM-1 signal, by checking the **QL Rx Enabled** check box.
3. Define the quality level on the received signal, by using the **QL Forced** scroll list. This value is used when the check on the received S1 byte is not performed (this is also the value of S1 sent on the STM-1 interface).
4. Enable (or not) the loss of synchronisation source, when a MS EXC alarm is detected on the STM-1 line selected as synchronisation source, by checking the **Line Source Configuration** check box.
5. Confirm the configuration by clicking on the **OK** button.

To configure a tributary as a source:

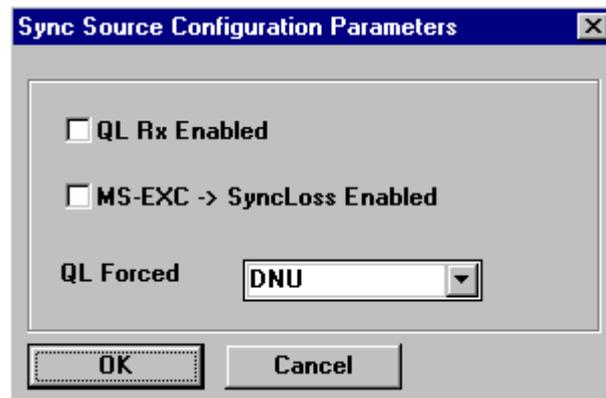


1. Select the port to be used as synchronisation source, by clicking on it in the list.
2. Enable (or not) the check on the S1 byte of the incoming STM-1 signal, by checking the **QL Rx Enabled** check box (only for STM-1 tributaries).
3. Define the quality level on the received signal, by using the **QL Forced** scroll list. This value is used, for STM-1 tributaries, when the check on the received S1 byte is not performed (this is also the value of S1 sent on the STM-1 interface).
4. Select the Port (1 or 2) to be used on Timex, by checking the relevant **2Mb/STM-1 Trib. Source Config.** radio button (only the tributary in position 3 can always use two ports as synchronisation sources).
5. Confirm the configuration by clicking on the **OK** button.

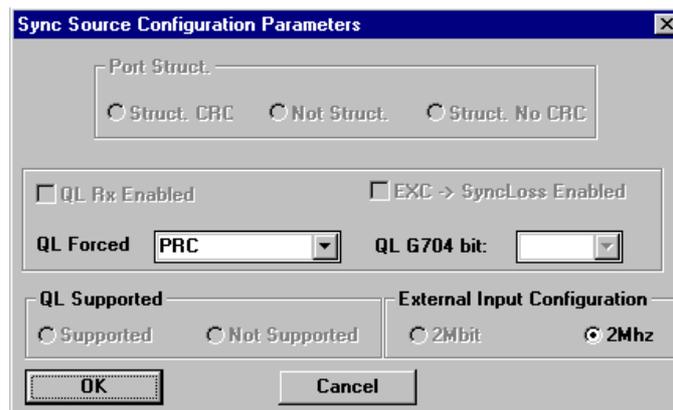
To modify an equipped synchronisation source:

1. Select an equipped synchronisation source, by clicking on it in the list.
2. Click on the **EDIT** button.

The **Sync Source Configuration Parameters** window will be displayed.



3. Enable (or not) the check on the quality of the incoming signal, by checking the **QL Rx Enabled** check box (for STM-1 signals). Define the quality level on the received signal, by using the **QL Forced** scroll list. This value is used when the check on the received S1 byte is not performed on STM-1 signals or for PDH tributaries.
4. Check the **MS-EXC -> SyncLoss Enabled** check box, to enable the emission of a loss of synchronisation source alarm. This alarm is emitted when a MS EXC alarm is detected on the STM-1 line selected as synchronisation source.
5. For an external input signal define the Forced Quality Level on the received signal by using the **QL Forced** scroll list. The other fields regarding the 2Mbit/s parameters are not available yet.



6. Confirm the configuration by clicking on the **OK** button.

To remove an equipped synchronisation source:

1. Select an equipped synchronisation source, by clicking on it in the list.
2. Click on the **DELETE** button.

The same result can be obtained by double clicking on the selected source.

See Also:

External Synchronisation Outputs, QL Table Entry, Synchronisation, System Synchronisation Sources

System Synchronisation Sources

(Configuration -> Sync Configuration -> System)

This function is used to enable the possible synchronisation sources used by the system.

By clicking on the **System** button, on the top of the **Sync Configuration** window, the selected folder becomes accessible.

The screenshot shows the 'Sync. Configuration' window with the 'System' tab selected. The main table lists synchronization sources with their configuration state, current state, priority, and operation state. Below the table are buttons for 'ADD', 'DELETE', and 'EDIT'. The 'Status' is 'Free Running' and 'Command Status' is 'No Request'. There are also buttons for 'Manual Switch To', 'Forced Switch To', 'Lockout', 'Exit VTR', 'Clear', 'Sgs. Command', 'Holdover', 'Free Running', and 'Clear'. At the bottom, there are 'Refresh', 'OK', 'Cancel', and 'HELP' buttons.

Source	Cnf State	State	Priority	Op State
Ext2-2Mhz	EQUIPPED	Out Of Service	3	No Request
Line0 MA	EQUIPPED			
Line0 MB	EQUIPPED			

The main element of this window is a list of synchronisation sources used by the equipment, with their state and their priority.

When the synchronisation source in use fails, the equipment will switch to the available source with the highest priority. If the use of quality information is enabled, the equipment always uses the highest quality synchronisation source.

For each defined synchronism source, the **System** folder makes available the following information:

Source

displaying the source identifier.

Cnf. State

indicating that the source has been defined.

For each enabled source (i.e. sources with an assigned priority), the **System** folder also displays the following information:

State

indicating the state of the synchronisation source.

Priority

indicating the priority assigned to the synchronisation source ("1" is the highest priority).

Op. State

indicating the operative state of the source.

In the **System** folder are also displayed the following information, in two dedicated text fields:

Status

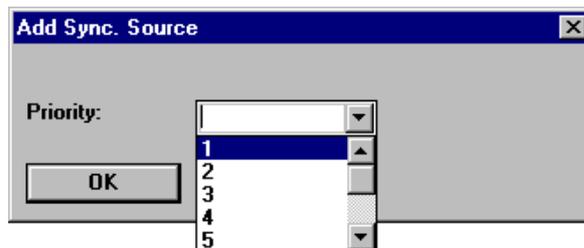
displaying the state of the system internal oscillator.

Command Status

displaying any command performed by the operator on the internal oscillator.

To add a new synchronisation source:

1. Select an equipped synchronisation source, by clicking on it in the list.
2. Click on the **ADD** button.

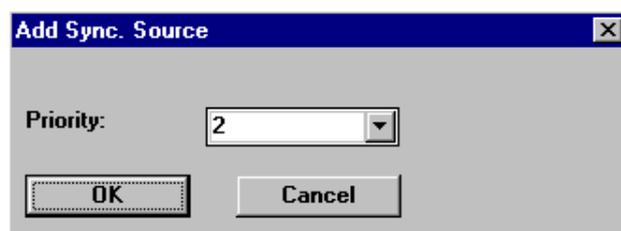


The **Add Sync. Source** window will be displayed.

3. Select the priority level for the new synchronisation source (from 1 to 10).
4. Confirm by clicking on the **OK** button.

To modify an existing synchronisation source:

1. Select the synchronisation source to be modified, by clicking on it in the list.
2. Click on the **EDIT** button.



The **Add Sync. Source** window will be displayed.

3. Select the new value for the priority.
4. Confirm the new settings, by clicking on the **OK** button.

To remove an existing synchronisation source:

1. Select the synchronisation source to be deleted, by clicking on it in the list.
2. Click on the **DELETE** button.

The same result can be obtained by double clicking on the selected source.

To define the protection parameters of the system synchronisation sources:

1. Set the **Protection Mode** (revertive or not revertive) by checking the relevant radio button.

----- When the quality level is enabled the protection type is always revertive.

2. In case of a Revertive protection, define the Wait to Restore time (WTR), which is the time waited by the system before switching to the highest priority source that becomes available again.

The WTR can be set from 0 to 60 mins with 0.5 steps (default 2.5).

----- In case of an equipment where the management of quality information is enabled, the protection mode is not important, because the system always uses the highest quality source with revertive protection mode.

To define the quality parameters:

1. Check the **SSM Enabled** box to enable the use of quality information (this is based on a check of the S1 byte of the SOH of the incoming STM-1 signals or of the quality information defined by the user).
2. Set the value of the S1 byte to be transmitted on the STM-1 lines, by using the **Tx QL if SSM disabled** scroll list. This value is only sent when the system does not use the quality information, for the synchronisation source selection.
3. Set the quality level used as threshold to force the system to Holdover mode, by using the **QL Thrs. for Holdover** scroll list (when the quality level of the in use source is under the specified value, the system switches to Holdover mode).
4. Set the value of the S1 byte to be transmitted on the STM-1 lines when the system is in Free Running mode, by using the **Tx QL Free-running** scroll list. This value is used only when the system does not use the quality information.

----- When the system is in Free Running mode, the SEC quality should be selected for being transmitted to the lines.

See Also:

External Synchronisation Outputs, QL Table Entry, Synchronisation, System Synchronisation Sources Switch Operations

System Synchronisation Sources Switch Operations

To perform a Manual Switch from the in use synchronisation source, to another one:

1. Select the synchronisation source to which the switch has to be performed, by clicking on it in the list.
2. Click on the **Manual Switch To** button.

If this selected synchronisation source is not available the system does not execute the switch.

To perform a Forced Switch from the in use synchronisation source, to another one:

1. Select the synchronisation source to which the switch has to be performed, by clicking on it in the list.
2. Click on the **Forced Switch To** button.

In this case the system executes anyway the switch to the new synchronisation source. If a synchronisation source to which a Forced Switch has been performed, gets failed, no switch to the highest priority available source takes place and the system will go to the holdover mode.

To clear a Switch operation:

1. Select the synchronisation source on which the switch has been performed, by clicking on it in the scroll list.
2. Click on the **Clear** button.

To disable the use of a synchronisation source:

1. Select the synchronisation source to be disabled, by clicking on it in the list.
2. Click on the **Lockout** button.

To cancel a previous Lockout operation on a synchronisation source:

1. Select the previously disabled synchronisation source, by clicking on it in the scroll list.

Click on the **Clear** button.

To exit from a Wait To Restore condition:

1. Click on the **Exit WTR** button.

The system will switch immediately to the highest priority/quality available source.

To force the system to operate in Holdover mode:

1. Click on the **Holdover** button.

The system will switch immediately to Holdover mode.

To force the system to operate in Free Running mode:

1. Click on the **Free Running** button.

The system will switch immediately to Free Running mode (using the internal oscillator).

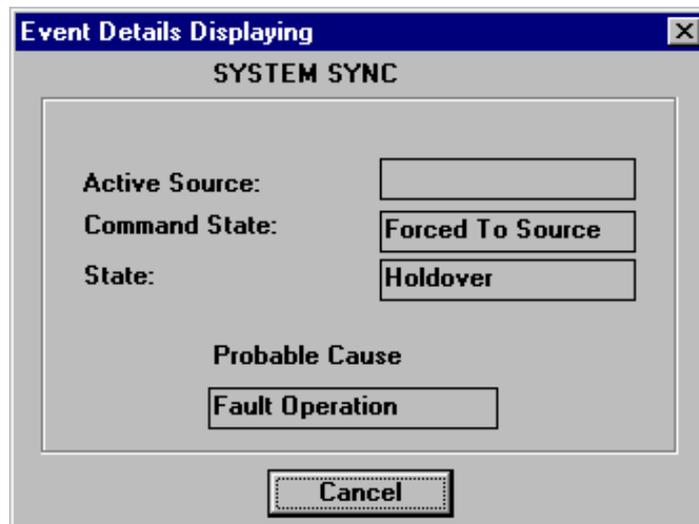
To clear a Holdover or Free Running mode (forced by the use of one of the two relevant buttons):

1. Click on the **Clear** button.

The system will switch to the highest priority/quality available source.

Sync switch -> System Sync (Event Details)

All the switches connected to synchronisation sources generates an event **Sync switch**, in the Event Monitor Window and in the NE LOG. By double clicking on this event the **Event Details Displaying** window is displayed.



This window is used to display additional information about the system synchronisation switch that has taken place, by means of the following fields:

Active Source

indicating the source used to synchronise the equipment.

Command State

indicating the cause of the switch.

State

displaying the status of the system internal oscillator.

Probable Cause

indicating the probable cause of the switch.

See Also:

Equipping Synchronisation Sources, External Synchronisation Outputs, NE Log, QL Table Entry, System Synchronisation Sources

External Synchronisation Outputs

(Configuration -> Sync Configuration -> Ext 1 Output / Ext 2 Output)

This function is used to enable the possible synchronisation outputs managed by the ADM-1.

Selecting the **Ext1 Output** folder, on the top of the **Sync. Configuration** window, for managing the external output synchronisation connectors.

The screenshot shows the 'Sync. Configuration' window with the 'Ext 1 Output' tab selected. The main table lists synchronization sources with their configuration states and operational states.

Source	Cnf State	State	Priority	Op State
Ext2-2Mhz	EQUIPPED	Out Of Service	8	No Request
Line0 MA	EQUIPPED	Out Of Service		
Line0 MB	EQUIPPED	Out Of Service	2	No Request

Below the table are buttons for 'ADD', 'DELETE', and 'EDIT'. The 'Status' is 'Squelched' and 'Command Status' is 'No Request'. The '2Mb Configuration Data' section includes options for 'Multiframe', 'QL Supported', and 'QL G704 bit:'. The 'Ext. Output Conf.' section has radio buttons for '2Mb' and '2Mhz'. Other settings include 'AIS Squelch Enabled', 'SSM Enabled', 'VTR (min) 2.5', 'External Output Mode' (NORMAL or SYSTEM), 'Tx QL if SSM disabled: SEC', 'Squelch AIS Quality Level: SEC', and 'Protection Type' (Revertive or Not Revertive). Buttons for 'Refresh', 'OK', 'Cancel', and 'HELP' are at the bottom.

The main element of this window is a list of synchronisation outputs supplied by the equipment, with their state and their priority.

When the synchronisation source in use fails, the equipment will switch on the available source with the highest priority. If the use of quality information is enabled, the equipment always uses the highest quality synchronisation source.

For each defined synchronism source, the **Ext. Output** folder makes available the following information:

Source

displaying the source identifier.

Cnf. State

indicating that the source has been defined.

For each enabled source (i.e. sources with an assigned priority), the **Ext. Output** folder also displays the following information:

State

indicating the status of the synchronisation source.

Priority

indicating the priority assigned to the synchronisation source ("1" is the highest priority).

Op. State

indicating the operative state of the source.

In the **Ext1/Ext2 Output** folders are also displayed the following information, in two dedicated text fields:

Status

displaying the status of the outgoing synchronisation signal.

Command Status

displaying any command performed by the operator on the internal oscillator.

Two external output configurations are possible:

2Mbit/s

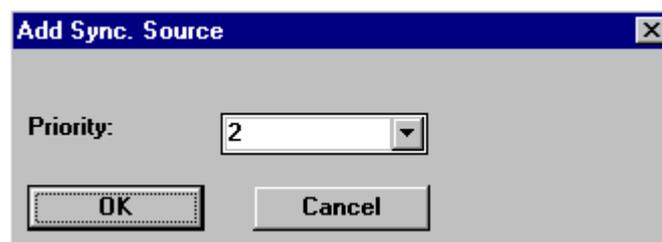
This configuration is possible only on Ext1 Output.

2MHz

This configuration is possible on Ext1/Ext2 Outputs.

To add a new synchronisation output:

1. Select an equipped synchronisation source, by clicking on it in the list.
2. Select the type of signal (2Mbit/s-2MHz) by checking the relevant radio button
3. Click on the **ADD** button.

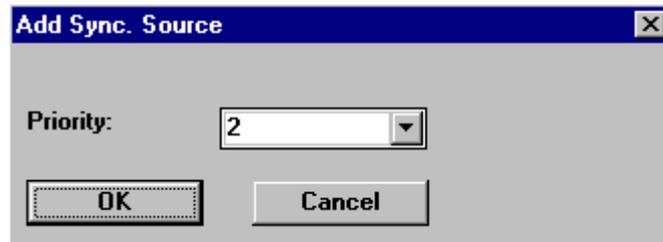


The **Add Sync. Source** window will be displayed.

4. Select the priority level for the new synchronisation output (from 1 to 10).
5. Confirm by clicking on the **OK** button.

To modify an existing synchronisation output:

1. Select the synchronisation output to be modified, by clicking on it in the list.
2. Click on the **EDIT** button.



The **Add Sync. Source** window will be displayed.

3. Select the new values for the priority.
4. Confirm the new settings, by clicking on the **OK** button.

To remove an existing synchronisation output:

1. Select the synchronisation output to be deleted, by clicking on it in the list.
2. Click on the **DELETE** button. The same result can be obtained by double clicking on the selected source.

To define the protection parameters of the system synchronisation output references:

1. Set the **Protection Type** (revertive or not revertive) by checking the relevant radio button.

----- When the quality is enabled the protection type is always revertive.

2. In case of a Revertive protection, define the Wait to Restore time (WTR), which is the time waited by the system before switching to the highest priority source that becomes available again.

The WTR can be set from 0.0 to 60 min. with 0.5 steps (default 2.5).

3. Set the **External Output Mode** (normal or system) by checking the relevant radio button.

When the System Mode is selected, the list specified for the System Synchronisation Sources (with their priority) is used also for the External Synchronisation Outputs.

When the Normal Mode is selected the list specified for the external output sources (with their priority) is used for the External Synchronisation Outputs.

To configure the external clock reference:

1. Select the **External Output Configuration** (2Mbit/s or 2MHz), by checking the relevant radio button. This selection is possible only on the **Ext1 Output** folder.
2. Define, if the selected external reference is a 2Mbit/s signal, the **2Mb Configuration Data**, by selecting the Quality Level to transmit.
3. Enable the injection of AIS signal on the clock output, whenever this reference has to be squelched, by checking the **AIS Squelch enabled** check box (the output is not squelched and an AIS signal is transmitted). The output signal is squelched in these conditions:
 - Normal External Output Mode**
When all the synchronisation sources are lost
 - System External Output Mode**
When all the synchronisation sources are lost the output signal is sent with the system clock quality
4. Enable (or not) the management of quality information (Timing Marker) on the synchronisation outputs, by checking the **SSM Enabled** check box.
5. Define the quality level inserted on the transmitted clock reference, by using the **Tx QL if SSM disabled** scroll list. This value is used only when the system does not use the quality information.
6. Define the Quality Level used as threshold to squelch the synchronisation output, by using the **Squelch AIS Quality Level** scroll list. If there is no a synchronisation source available, with a quality level equal or superior to that threshold, the synchronisation output is either squelched or substituted by an AIS signal.
7. Confirm all the selections by clicking on the **OK** button.

See Also:

Equipping Synchronisation Sources, External Synchronisation Output Switch Operations, NE Log, QL Table Entry, Synchronisation, System Synchronisation Sources

External Synchronisation Output Switch Operations

To perform a Manual Switch from the in use synchronisation output, to another one:

1. Select the synchronisation output to which the switch has to be performed, by clicking on it in the list.
2. Click on the **Manual Switch To** button.

If this second synchronisation output is not available the system does not execute the switch.

To perform a Forced Switch from the in use synchronisation output, to another one:

1. Select the synchronisation output to which the switch has to be performed, by clicking on it in the list.
2. Click on the **Forced Switch To** button.

In this case the system executes anyway the switch to the new synchronisation source. If a synchronisation output to which a Forced Switch has been performed, gets failed, no switch to the highest priority available source takes place.

To return from a Switch operation:

1. Select the synchronisation output on which the switch has been performed, by clicking on it in the scroll list.
2. Click on the **Clear** button.

To prevent the use of a synchronisation output:

1. Select the synchronisation output to be disabled, by clicking on it in the list.
2. Click on the **Lockout** button.

To cancel a previous Lockout operation on a synchronisation output:

1. Select the previously disabled synchronisation output, by clicking on it in the scroll list.
2. Click on the **Clear** button.

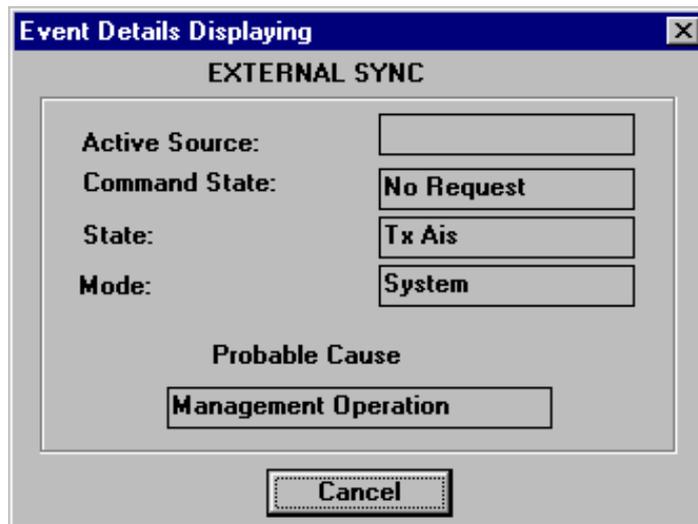
To exit from a Wait To Restore condition:

1. Click on the **Exit WTR** button.

The system will switch immediately to the highest priority/quality available source.

Sync switch -> External Sync (Event Details)

All the switches connected to synchronisation sources generates an event **Sync switch**, in the Event Monitor Window and in the NE LOG. By double clicking on this event the **Event Details Displaying** window is displayed.



This window is used to display additional information about the synchronisation source switch that has taken place, by means of the following fields:

Active Source

displaying the source used for synchronising the equipment.

Command State

displaying any command performed by the operator on the oscillator.

State

displaying the status of the outgoing synchronisation signal.

Mode

displaying the operative mode of the oscillator.

Probable Cause:

indicating the probable cause of the switch.

See Also:

Equipping Synchronisation Sources, External Synchronisation Outputs, NE Log, QL Table Entry

QL Table Entry

(Configuration -> Sync Configuration -> QL Table Entry)

By clicking on the **QL Table Entry** button, on the top of the **Sync. Configuration** window, the selected folder becomes accessible.

S1 value:	QL name:	QL priority:	S1 value:	QL name:	QL priority:
0000	-----	Undef	1000	SSUL	8
0001	-----	Undef	1001	-----	Undef
0010	PRC	1	1010	-----	Undef
0011	-----	4	1011	SEC	9
0100	SSUT	5	1100	-----	Undef
0101	-----	Undef	1101	-----	Undef
0110	-----	Undef	1110	-----	Undef
0111	-----	Undef	1111	DNU	11

This folder gives access to Synchronisation Quality Table, with a list of possible values of byte S1. To each value of byte S1, an acronym is associated and its relevant priority.

To configure a QL table entry, proceed as follows:

1. Edit the **QL name**, for the selected value of byte S1 (max. 10 characters).
2. Set the **QL priority** of the selected QL table entry, by using the relevant scroll list.
3. Click on **Default** button for recovering the default configuration (this option is always available also after the **OK** button has been selected).
4. Click on the **OK** button, to confirm the new configuration.

----- The following values of byte S1 are defined by ITU-T Recommendations, therefore they cannot be set:

1111	Don't Use for Synch (DNU)
1011	Internal Clock (SEC)
1000	G.812 Local (SSUL)
0100	G.812 Transit (SSUT)
0010	G.811 (PRC)

5. Click on the **Refresh** button for updating the screen to the current state.

See Also:

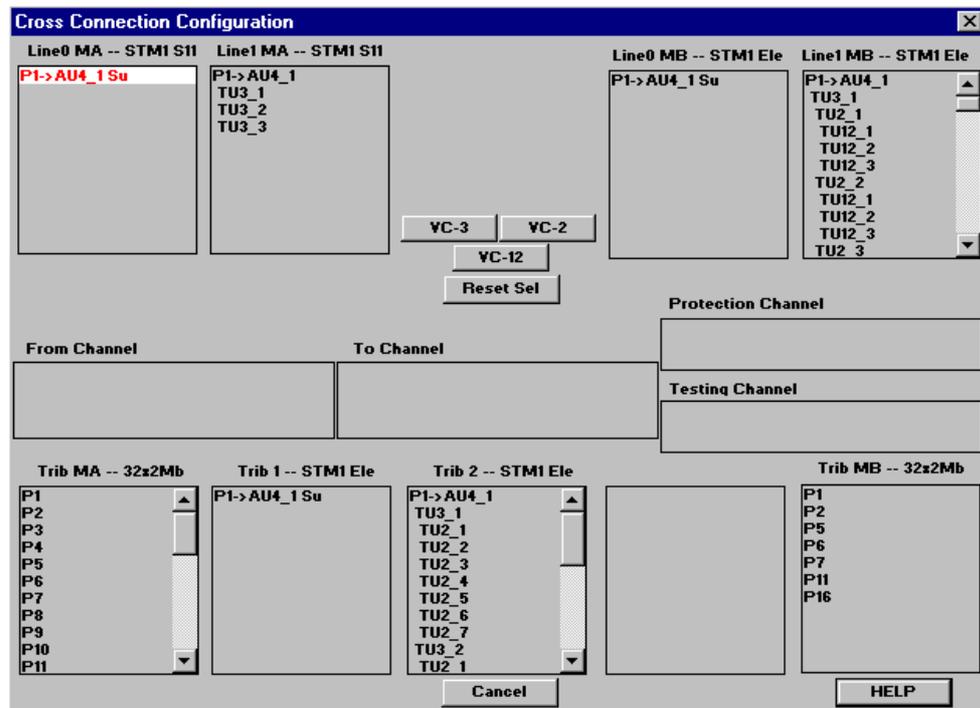
Equipping Synchronisation Sources, External Synchronisation Outputs, Synchronisation, System Synchronisation Sources, Cross Connections

Cross Connections

(Configuration -> Cross Connection)

This function is used to create all types of managed cross connections, to create SNCP protections and to handle the SNCP protection operations.

By selecting this item, the **Cross Connection Configuration** window becomes accessible.



The lower part of this window shows the different tributaries with their SDH frame structure.

The upper part of the window shows the four lines (Line 0 and Line 1 on MOST A, Line 0 and Line 1 on MOST B) with their SDH frame structure. There are also two windows with the currently selected elements to be connected, one window displaying the protection channels and one window dedicated to the testing channels.

See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Multiply SDH Frame, Unidirectional Cross Connection, SNC Protection, Split Access Cross Connection, VC-2n-C Cross Connection

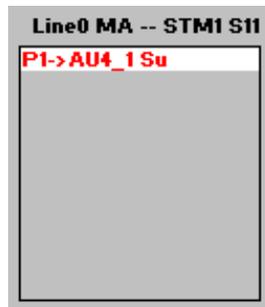
Multiply SDH Frame

The multiply buttons (**VC-3**, **VC-2**, **VC-12**) are used to explode the higher level elements of the SDH frame structure into the lower level ones.

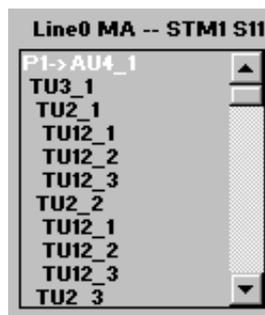


To explode a **VC-4**, a **VC-3** or a **VC-2** into its lower order components (down to **VC-12** level):

1. Select a **AU-4**, a **TU-3** or a **TU-2** in a **STM-1** frame by clicking on it (the selected channel becomes red).



1. Click on the multiply **VC-12**, **VC-2** or **VC-3** button to split the selected element into its lower level components (**TU-3**, **TU-2** and **TU-12** for **AU-4**, **TU-2** and **TU-12** for the **TU-3**, **TU-12** for the **TU-2**).



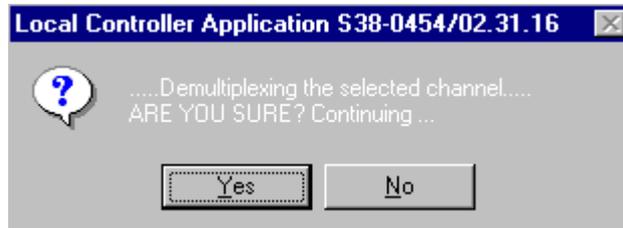
Once an element of the SDH frame is split into its lower level elements, these are still available in some eventual future access to the **Cross Connections** window.

NOTICE

It is not possible to multiply an **AU-4** or a **TU** already cross-connected.

To remove a multiply operation:

1. Select the multiplexing level to be removed, by double clicking on the upper level (i.e. TU-2 for the TU-12s). The selected channel becomes red.
2. A warning window will be displayed. Select **Yes** to confirm.

**NOTICE**

It is not possible to remove a multiply operation of a selected level if some of the lower TU level are still cross-connected.

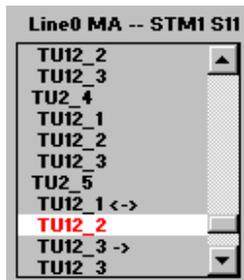
See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Cross Connections, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Unidirectional Cross Connection, SNC Protection, Split Access Cross Connection, VC-2n-C Cross Connection

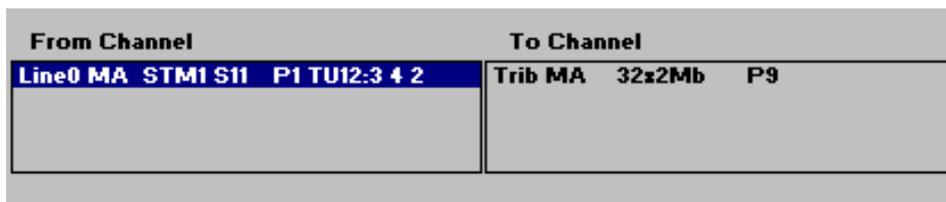
Unidirectional Cross Connection

To create a unidirectional cross connection:

1. Select the first channel to connect, by double clicking on it.
The selected channel will be displayed in a red colour, and the channel indication will appear in the **From Channel** box.

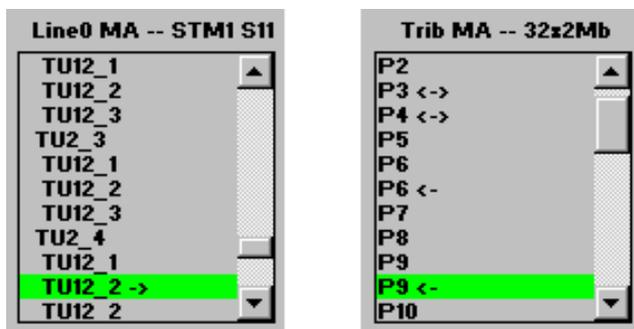


2. Select the second channel to connect, by double clicking on it.
The selected channel will become red, and the channel indication will appear in the **To Channel** box.



3. Select the type of cross connection by checking the **Unidirectional** radio button.
4. In case you wish to cancel the selected connection click on **Reset Sel** button.
5. Create the cross connection, by using the **Create/Add** button.

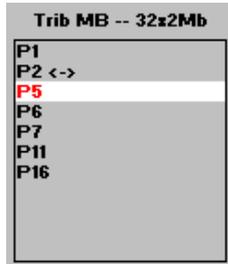
After these operations the cross connected channels will be displayed in green and they will show the symbol ">" after the input channel, and the symbol "<" after the output channel, to indicate the existing connection.



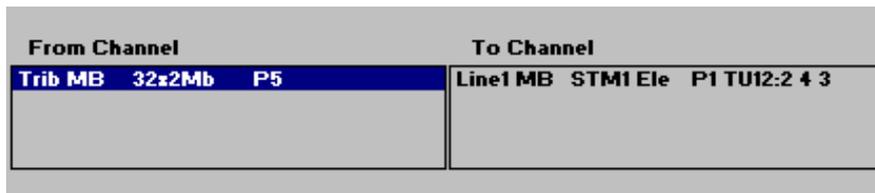
Bidirectional Cross Connection

To create a bidirectional cross connection:

1. Select the first channel to connect, by double clicking on it.
The selected channel will be displayed in a red colour and the channel indication will appear in the **From Channel** box.

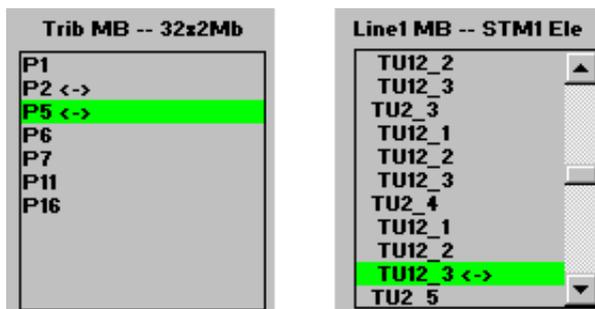


2. Select the second channel to connect, by double clicking on it.
The selected channel will become red, and the channel indication will appear in the **To Channel** box.



3. Select the type of cross connection by checking the **Bidirectional** radio button.
4. In case you wish to cancel the selected connection click on **Reset Sel** button.
5. Create the cross connection, by using the **Create/Add** button.

After these operations the cross connected channels will be displayed in green and they will show the symbol "<->" to indicate they are connected to another channel.



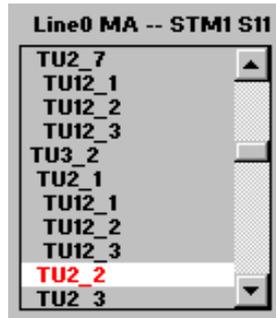
See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Cross Connections, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Multiply SDH Frame, Unidirectional Cross Connection, SNC Protection, Split Access Cross Connection, VC-2n-C Cross Connection

Broadcast Cross Connection

To create a broadcast cross connection:

1. Select the first channel to connect, by double clicking on it.
The selected channel will become red, and the channel indication will appear in the **From Channel** box.

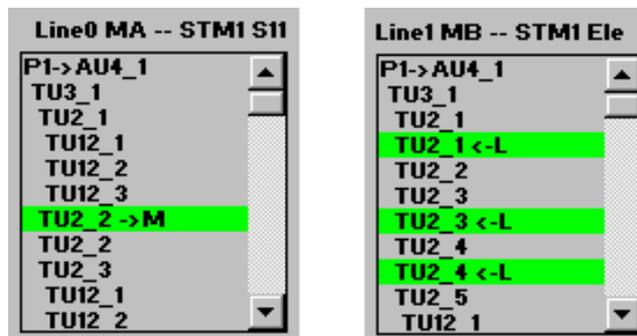


2. Select the another channel to connect, by double clicking on it.
The selected channel will become red, and the channel indication will appear in the **To Channel** box.
3. Repeat step 2. When a second leg is selected, the cross connection becomes automatically broadcast. All the selected channel will become red, and the channel indication will appear in the **To Channel** box.

From Channel	To Channel
Line0 MA STM1 S11 P1 TU2:1 2	Line1 MB STM1 Ele P1 TU2:11
	Line1 MB STM1 Ele P1 TU2:14
	Line1 MB STM1 Ele P1 TU2:13

4. In case you wish to cancel the selected connection click on **Reset Sel** button.
5. Create the cross connection, by using the **Create/Add** button.

After these operations the cross connected channels will be displayed in green and they will show the symbol "->M" after the *Master* channel and the symbol "<-L" after all the *Legs* channels, to indicate the existing connection.



To add a leg to an existing broadcast cross connection:

- 1.** Select an existing broadcast cross connection by clicking on the master channel.
- 2.** Click on the **Add Leg** button.

The Master channel will be displayed in the **From Channel** box.

- 3.** Repeat step 2. When a second leg is selected, the cross connection becomes automatically broadcast. All the selected channel will become red, and the channel indication will appear in the **To Channel** box

See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Cross Connections, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Multiply SDH Frame, Unidirectional Cross Connection, SNC Protection, Split Access Cross Connection, VC-2n-C Cross Connection

Loopback Cross Connection

To create a loop-back cross connection:

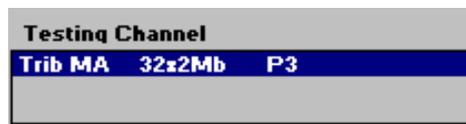
1. Select the channel of a pre-existent connection on which create the loop-back cross connection, by clicking on it.
The selected channel will be displayed in a blue colour in the **From Channel** box.

NOTICE

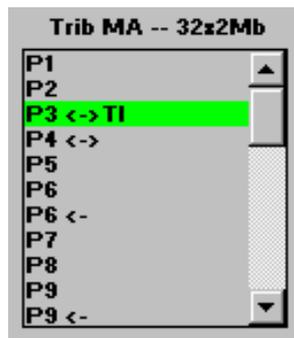
The loop-back connection can not be performed on a leg of a broadcast cross connection

2. Create the loop-back connection by clicking on the **Loopback** button.

The selected channel will be looped back and the channel indication will appear in the **Testing Channel** box.



After these operations the selected channel will be displayed in green and it will show the letters "TI" to indicate it is looped back.



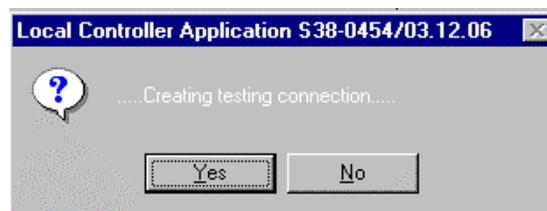
See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Cross Connections, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Multiply SDH Frame, Unidirectional Cross Connection, SNC Protection, Split Access Cross Connection, VC-2n-C Cross Connection

Split Access Cross Connection

To create a split access cross connection:

1. Select the channel of a pre-existent connection on which create the split access cross connection, by clicking on it.
The selected channel will be displayed in a blue colour in the relevant **From Channel** box.
2. Click on the **Split** button. The pointer shape will change to "+".
3. Select the test port, by double clicking on it.
The **Creating testing connection** window will appear.



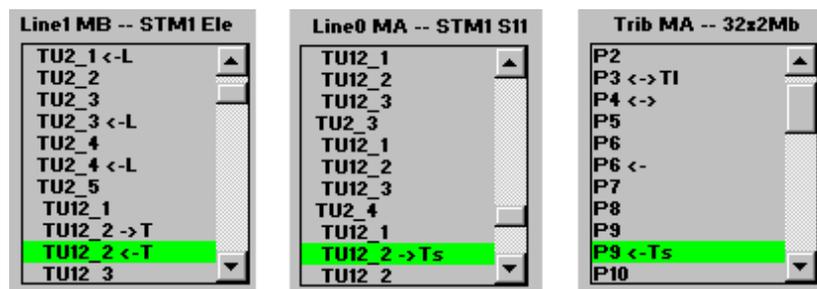
4. Click on **Yes** button.

The selected channel will be sent towards the test port and the channel indication will appear in the **Testing Channel** box.



After these operations the selected channel will be displayed in green and it show the letters "Ts".

The selected test port will be followed by the indication "T".



See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Cross Connections, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Multiply SDH Frame, Unidirectional Cross Connection, SNC Protection, Split Access Cross Connection, VC-2n-C Cross Connection

Monitor Cross Connection

To create a monitor cross connection:

1. Select the channel of a pre-existent connection on which create the monitor cross connection, by clicking on it.
The selected channel will be displayed in a blue colour in the relevant **From Channel** box.

NOTICE The monitor connection can not be performed on a leg of a broadcast cross connection

2. Click on the **Monitor** button. The pointer shape will change to "+".
3. Select the test port, by double clicking on it.
The **Creating testing connection** window will appear.

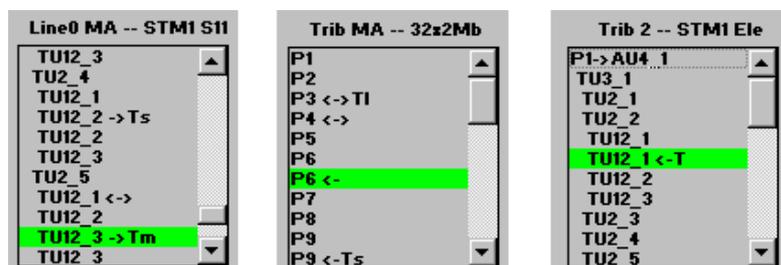


4. Click on **Yes** button.
5. The selected channel will be sent towards the test port and the channel indication will appear in the **Testing Channel** box.



After these operations the selected channel will be displayed in green and it will show the letters "Tm".

The selected test port will be followed by the indication "T".



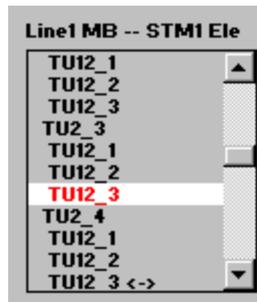
See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Cross Connections, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Multiply SDH Frame, Unidirectional Cross Connection, SNC Protection, Split Access Cross Connection, VC-2n-C Cross Connection

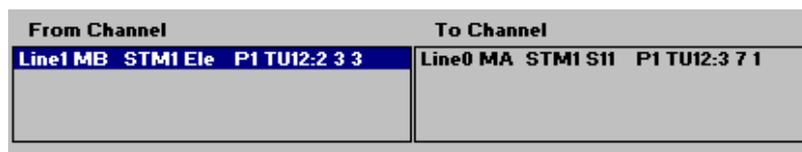
Dropped Cross Connections

To create a dropped connection:

1. Select the first channel to connect, by double clicking on it.
The selected channel will be displayed in a red colour and the channel indication will appear in the **From Channel** box.



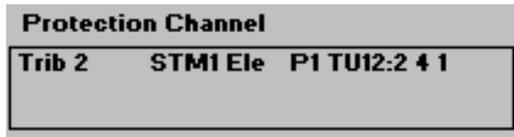
2. Select the second channel to connect, by double clicking on it.
The selected channel will become red, and the channel indication will appear in the **To Channel** box.



3. Select the type of cross connection by checking either the **Bidirectional** or **Unidirectional** radio button.
4. Click on the **Add Drop Continue** button. The pointer shape will change to "+".
5. Select the protection channel, by double clicking on it.
The Creating Drop And Continue Cross Connection window will be displayed.

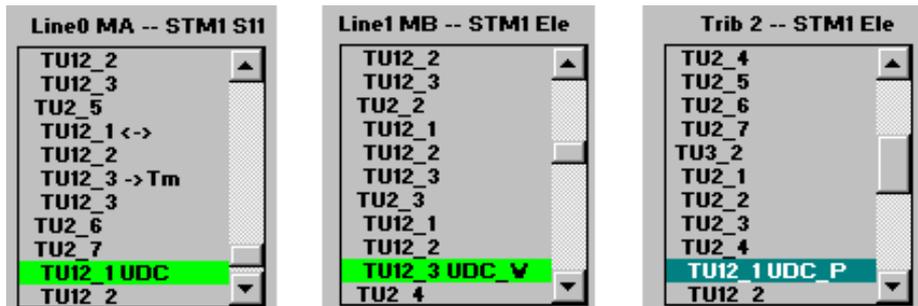


The protection channel indication will appear in the **Protection Channel** box.



After these operations the selected channels will be displayed in a light green colour and they will show the letters "UDC_W" (W = Worker) or "UDC" in case of **Unidirectional** dropped connection and the letters "BDC_W" and "BDC", in case of **Bidirectional** dropped connection.

The selected protection channel will show the letters "UDC_P" or "BDC_P".

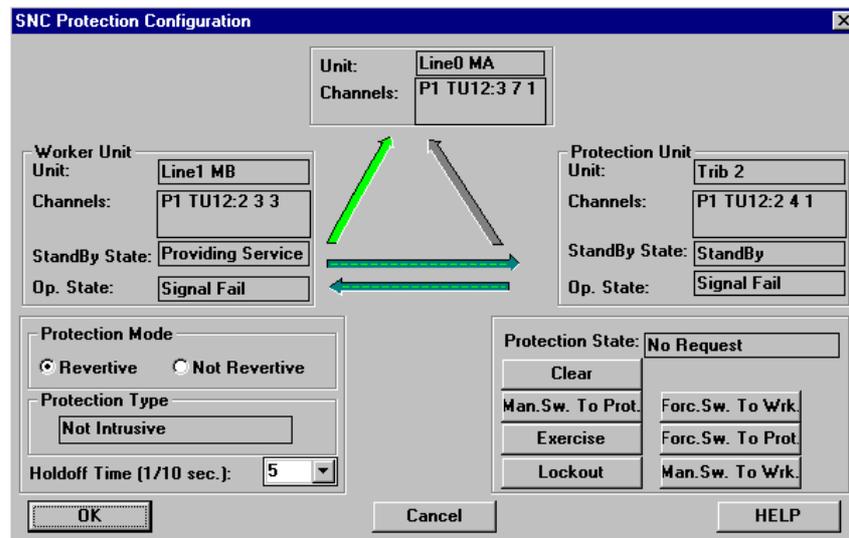


Dropped Cross Connection Switch Operations

To perform a Forced Switch:

1. Select a dropped cross connection, by clicking on one of the involved channels.
2. Click on the **Protection** button.

The **SNC Protection Configuration** window will be accessible.



The **SNC Protection Configuration** window displays the following information:

Unit

displaying the unit identifier.

Channels

displaying the channel involved in the protection.

Standby State

indicating the role of each unit involved in the dropped connection.

Op. State

indicating the operative state of the units involved in the dropped connections.

Protection Type

indicating the probable cause of the switch.

Protection State

indicating whether or not protection switches have been performed.

3. To switch from the *worker* to the *protection* channel, click on the **Forc. Sw. To Prot.** button.
4. To switch from the *protection* to the *worker* channel, click on the **Forc. Sw. To Wrk.** button.

In this case the system executes anyway the switch to the new selected channel. If a channel to which a Forced Switch has been performed, gets failed, no switch to the other one (even if it is available) takes place.

To perform a Manual Switch:

1. Select a dropped cross connection, by clicking on one of the involved channels.
2. Click on the **Protection** button.
The **SNC Protection Configuration** window will be accessible.
3. To switch from the *worker* to the *protection* channel, click on the **Man. Sw. To Prot.** button.
4. To switch from the *protection* to the *worker* channel, click on the **Man. Sw. To Wrk.** button.

In this case the switch is not performed if the selected channel is not available.

To disable the use of protection function in a dropped cross connection:

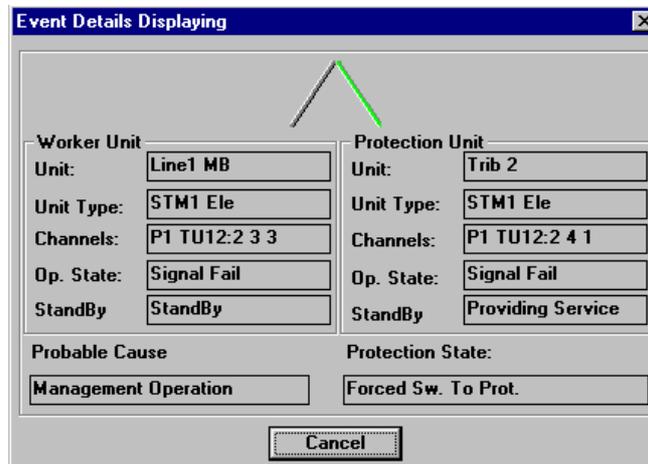
1. Select a dropped cross connection, by clicking on one of the involved channels.
2. Click on the **Protection** button.
The **SNC Protection Configuration** window will be accessible.
3. Click on the **Lockout** button.

To clear a switch or lockout operation:

1. Select a dropped cross connection, by clicking on one of the involved channels.
2. Click on the **Protection** button.
The **SNC Protection Configuration** window will be accessible.
3. Click on the **Clear** button.

Path Prot. Switch (Event Details)

All the switches connected to dropped cross connection generates an event **Path Prot. switch**, in the Event Monitor Window and in the NE LOG. By double clicking on this event the following window is displayed:



This window is used to display additional information about the dropped connection switch that has taken place. The working channel is displayed in green, while for each line are shown the unit type, the channel involved in the protection and further information, by means of the following fields:

Unit

displaying the unit identifier.

Unit Type

displaying the unit type.

Channels

indicating the channels involved in the dropped connection.

Op. State

indicating the operative state of the units involved in the dropped connections.

Standby

indicating the role of each unit involved in the dropped connection.

Probable Cause

indicating the probable cause of the switch.

Protection State

indicating whether or not protection switches have been performed.

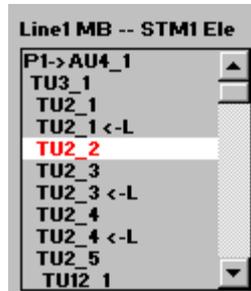
See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Cross Connections, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Multiply SDH Frame, Unidirectional Cross Connection, SNC Protection, SNCP Switch Operations, Split Access Cross Connection, VC-2n-C Cross Connection, NE Log, SNC Protection

VC-2n-C Cross Connection

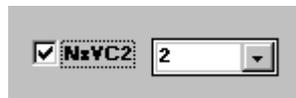
To create a VC-2n-C cross connection:

1. Select a VC-2 channel, by double clicking on it.



The channel indication will be displayed in the **From Channel** box.

2. Check the **NxVC2** check box.



3. Select the number of VC-2 channels to be concatenated, by using the relevant scroll list (N from 1 to 21).
4. Select the remaining N-1 VC-2 channels, to be inserted into the **From Channel** box.

After the N channels are selected, the system automatically places in the **To Channel** box the other N selected channels.

----- The N concatenated channels must belong to the same physical unit.

6. Select, by double clicking on them, the N VC-2 channels that will be inserted into the **To channel** box.

From Channel			To Channel		
Line1 MB	STM1 Ele	P1 TU2:12	Trib 2	STM1 Ele	P1 TU2:3 1
Line1 MB	STM1 Ele	P1 TU2:14	Trib 2	STM1 Ele	P1 TU2:3 3
Line1 MB	STM1 Ele	P1 TU2:17	Trib 2	STM1 Ele	P1 TU2:3 6

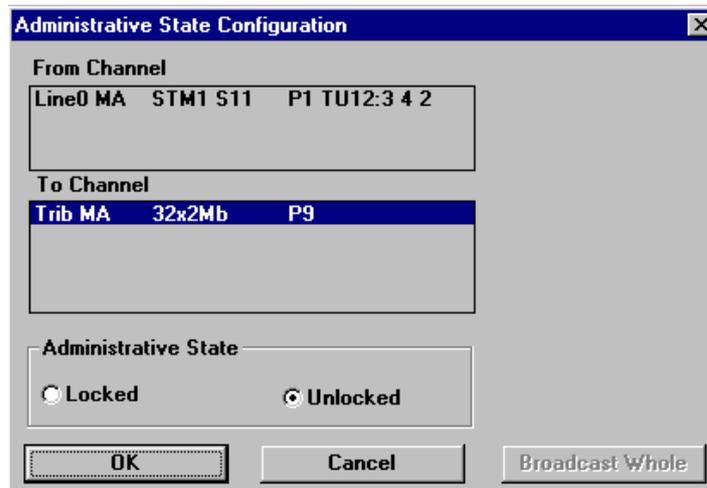
6. Check either the **Unidirectional**, the **Bidirectional** or **Broadcast** radio button
7. Create the cross connection, by using the **Create/Add** button.

See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Cross Connections, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Multiply SDH Frame, Unidirectional Cross Connection, SNC Protection, Split Access Cross Connection, VC-2n-C Cross Connection

Administrative State

Once an existing cross connection is selected the **Administrative State** button becomes available. By clicking this button the **Administrative State Configuration** window is displayed.



The default state of a cross connection is *Unlocked*. Using **Administrative State** radio button this state can be changed to *Locked*.

When a cross-connection is *Locked*, it can not be removed and the traffic is not managed (the stream is replaced with the AIS signal).

See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Cross Connections, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Multiply SDH Frame, Unidirectional Cross Connection, SNC Protection, Split Access Cross Connection, VC-2n-C Cross Connection

Busy Channel Indication

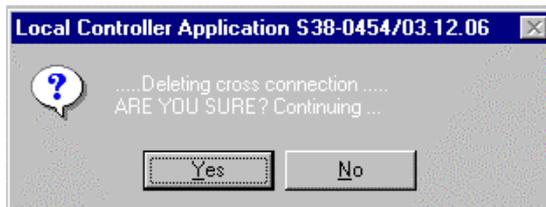
A busy indication, is available for the VC-4, VC-3 and VC-2, containing on their lower levels one or more cross connected channels. By clicking on these "busy" VCs a yellow line is displayed.

Deletion of a Cross Connection

The created cross connections must be deleted one by one.

To delete a cross connection:

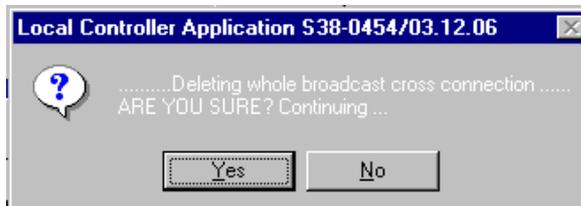
1. Select an existing cross connection, by clicking on it.
2. Click on the **Delete** button.
The **Deleting cross connection window** is displayed.



3. Click on **Yes** button.

To delete the master of a broadcast cross connection:

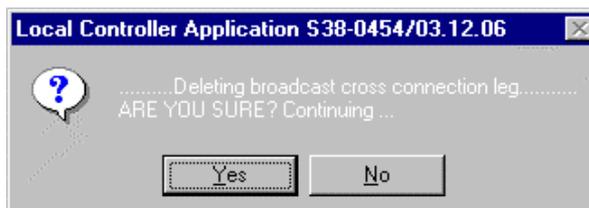
1. Select the master channel by clicking on it.
2. Click on the **Delete** button.
The **Deleting whole broadcast cross connection** window is displayed.



3. Click on **Yes** button.

To delete specific of a broadcast cross connection:

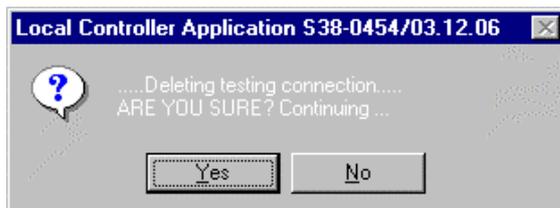
1. Select the leg channel by clicking on it.
2. Click on the **Delete** button.
The **Deleting broadcast cross connection leg** window is displayed.



3. Click on **Yes** button.

To delete a monitor, split access or loopback cross connection:

1. Select the testing channel by clicking on it.
2. Click on the **Delete** button.
The **Deleting testing connector** window is displayed.



3. Click on **Yes** button.

In this way, only the testing cross connection will be removed; the pre-existent cross connection will remain active.

See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Cross Connections, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Multiply SDH Frame, Unidirectional Cross Connection, SNC Protection, Split Access Cross Connection, VC-2n-C Cross Connection

SNC Protection

In the **Cross Connection Configuration** window it is also possible to create SNC Protection for existing cross connections.

To create an SNC Protection:

1. Select an existing bidirectional cross connection (or the *from* channel of a unidirectional cross connection), by clicking on the channel to be protected.

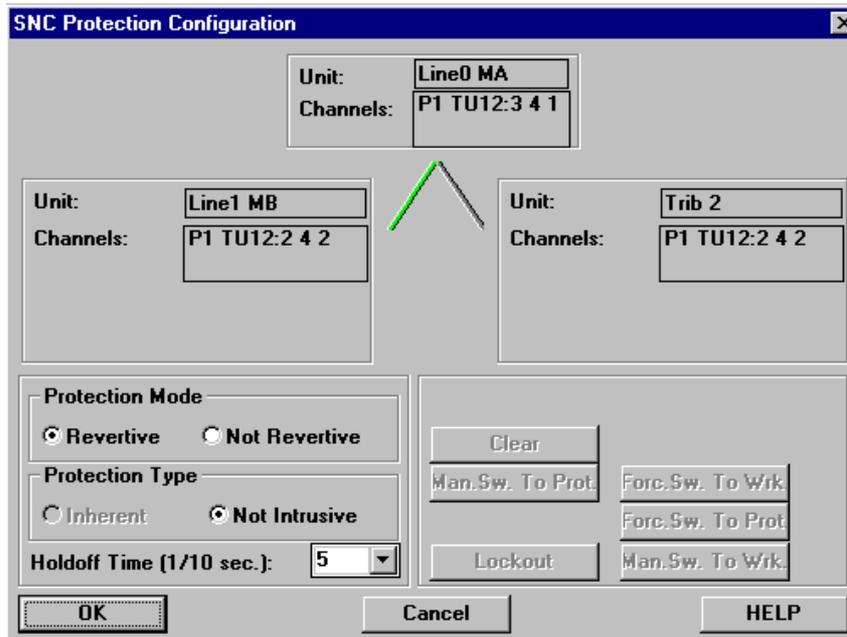
----- The channel to be protected must belong to an STM-1 unit.

2. Click on the **Protection** button.

The shape of the cursor will be changed.

3. Select the channel to be used as protection, by double clicking on it.

The **SNC Protection Configuration** window will be accessible.

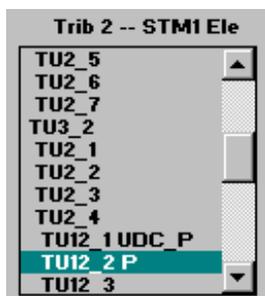


4. Select the protection mode (Revertive or Not Revertive) by checking the relevant radio button.
5. Select the SNCP scheme to be used (Inherent or Not Intrusive), by checking the relevant **Protection Type** radio button.

----- The Inherent protection can be selected for AU-4 channels only.

6. Define the **Holdoff Time** (expressed in tenths of second from 0 to 200, default 5), by using the relevant scroll list. This time defines the delay period during which the alarm must persist before the channel is switched to the protection.
7. Confirm the settings by clicking on the **OK** button.

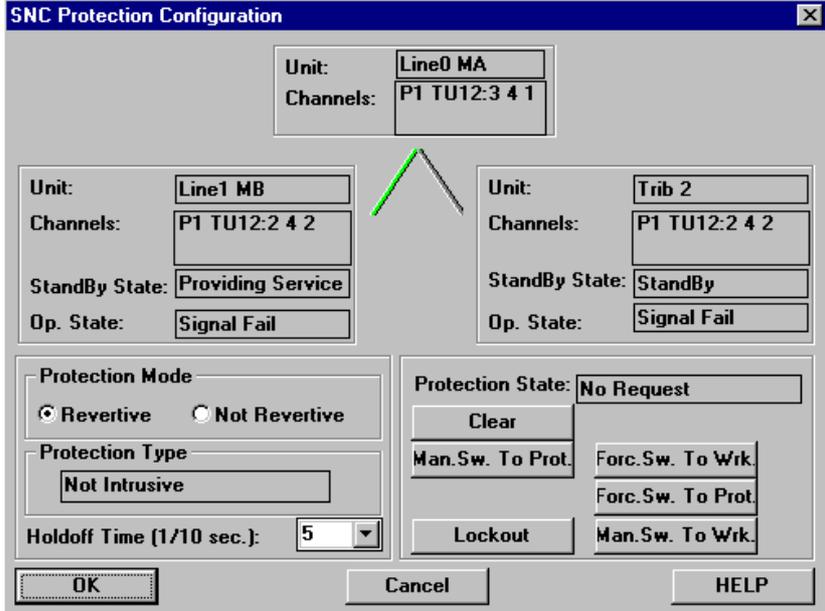
In the **Cross Connection Configuration** window the protection channel is displayed in a dark green colour, with the symbol "P" after the channel indication.



To modify the parameters of a SNCP:

1. Select a protected cross connection, by clicking on the worker or protection channel.
2. Click on the **Protection** button.

The **SNC Protection Configuration** window will be accessible.



This window is used to display additional information about the SNCP switch that has taken place. The working channel is displayed in green, while for each line interface are shown the unit type, the channel involved in the SNC Protection and further information, by means of the following fields:

Unit

displaying the unit identifier.

Channels

displaying the channels involved in the protection.

Op. State

indicating the operative state of the units involved in the connection.

StandBy State

indicating the state of channel involved in the connection.

Protection State

indicating whether or not protection switches have been performed.

Protection Type

indicating the type of protection.

3. Modify the parameters in the desired way.
4. Confirm the settings by clicking on the **OK** button.

To delete an existing SNCP:

The SNCP is deleted removing the worker channel. Proceed as described in "**Deletion of a Cross Connection**".

See Also:

Bidirectional Cross Connection, Broadcast Cross Connection, Cross Connections, Deletion of a Cross Connection, Dropped Cross Connections, Loopback Cross Connection, Monitor Cross Connection, Multiply SDH Frame, Unidirectional Cross Connection, SNC Protection, Split Access Cross Connection, VC-2n-C Cross Connection

SNCP Switch Operations

To perform a Forced Switch:

1. Select a protected cross connection, by clicking on the worker or protection channel.
2. Click on the **Protection** button.
The **SNC Protection Configuration** window will be accessible.
3. To switch from the *worker* to the *protection* channel, click on the **Forc. Sw. To Prot.** button.
4. To switch from the *protection* to the *worker* channel, click on the **Forc. Sw. To Wrk.** button.

In this case the system executes anyway the switch to the selected channel even if it is not available.

To perform a Manual Switch:

1. Select a protected cross connection, by clicking on the worker or protectionchannel.
2. Click on the **Protection** button.
The **SNC Protection Configuration** window will be accessible.
3. To switch from the *worker* to the *protection* channel, click on the **Man. Sw. To Prot.** button.
4. To switch from the *protection* to the *worker* channel, click on the **Man. Sw. To Wrk.** button.

In this case the switch is not performed if the selected channel is not available.

To disable the use of the protection channel in a SNC Protection:

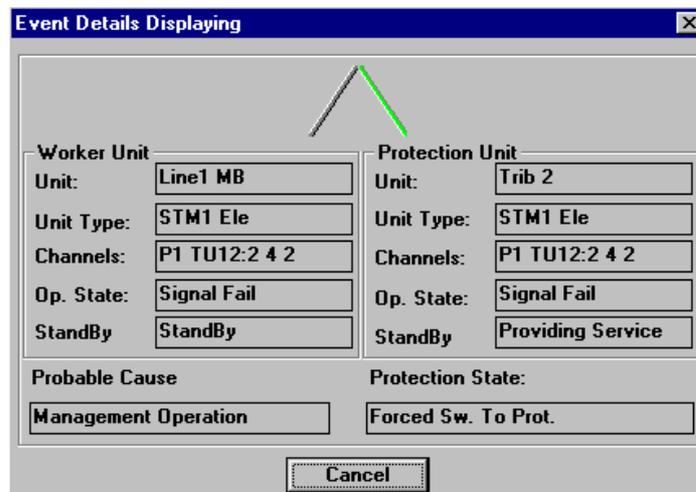
1. Select a protected cross connection clicking on the worker or protection channel.
2. Click on the **Lockout** button.
The protection channel will not be used anymore even if the main path gets failed.

To cancel a switch or lockout operation:

1. Select a protected cross connection, by clicking on the worker or protection channel.
2. Click on the **Protection** button.
The **SNC Protection Configuration** window will be accessible.
3. Click on the **Clear** button.

Path Prot. Switch SNC (Event Details)

All the switches connected to SNC Protection generates an event **Path Prot. Switch**, in the Event Monitor Window and in the NE LOG. By double clicking on this event the following window is displayed:



This window is used to display additional information about the SNCP switch that has taken place. The working channel is displayed in green, while for each line interface are shown the unit type, the channel involved in the SNC Protection and further information, by means of the following fields:

Unit

displaying the unit identifier.

Unit Type

displays the type of the unit.

Channels

indicating the channels involved in the protection.

Op. State

indicating the operative state of the units involved in the dropped connections.

Standby

indicating the state of each unit involved in the dropped connection.

Probable Cause

indicating the probable cause of the switch.

Protection State

indicating whether or not protection switches have been performed.

To perform an Exercise operation:

Functionality not managed yet.

See Also:

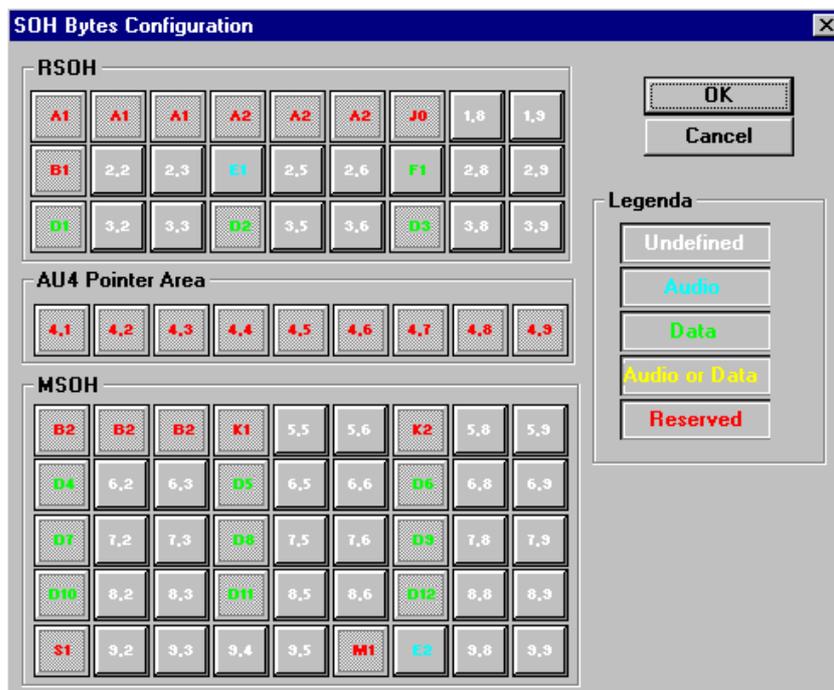
NE Log, SNC Protection

SOH Bytes Configuration

(Configuration -> SOH bytes Configuration)

This function is used to configure the spare bytes into the SOH structure.

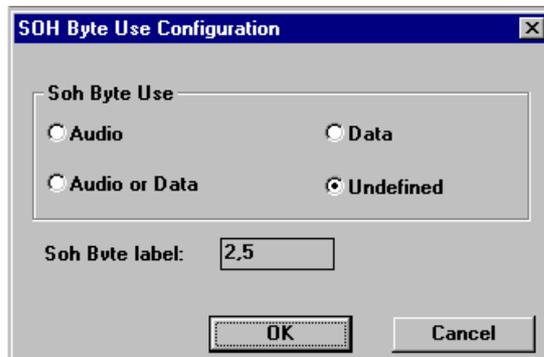
By selecting this item, the **SOH Bytes Configuration** window becomes accessible.



To configure a spare byte:

1. Select a spare byte by clicking on it (the not selectable bytes are disabled). The red ones are for reserved use (i.e. D1, D2, D3, etc.).

The **SOH Byte Use Configuration** window will be displayed.



2. Select which kind of traffic you wish to carry within the selected byte: Audio, Audio or Data or Data (use Undefined to cancel the current byte configuration). The Auxiliary unit will be able to use the configured spare bytes for carrying the service telephone channel or the auxiliary data channels.
3. Insert a label to identify the SOH byte (max 4 characters). For E1, E2 and F1 is not possible to specify a label.
4. Confirm the selection by clicking on the **OK** button.

See Also:

Auxiliary Unit Configuration

OSI Parameters Setup

(Configuration -> OSI Configuration-> Setup)

This function is used to modify the OSI configuration of the ADM-1.

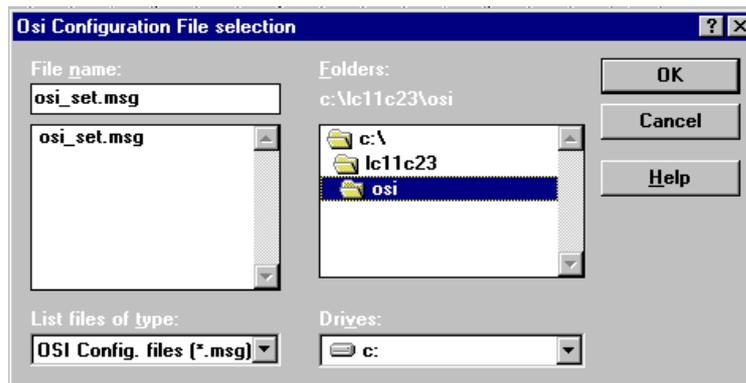
The parameters of OSI reference model, are available in the following files:

S_ADDRAP
S_CLNS
S_DCCP1
S_DELRAP
S_ETH
S_OSIRST
S_OSIUPT
S_TP4

To modify the OSI configuration:

1. Modify the values of the selected OSI parameters, by changing them in the relevant OSI configuration files.
2. Create a file, with extension **msg** (that means, for example, a file named **osiconf.msg**), with the list of the OSI configuration files that have been changed, with specified the path names (i.e. **.\S_OSIRST**).
3. Select the **OSI Configuration -> Setup** item, in the **Configuration** menu.

A **File Selection** window will be displayed.



4. Specify, in this selection window, the name of the MSG file with the list of modified OSI configuration files.
5. Confirm the operation by clicking on the **OK** button.

The new OSI configuration files will be downloaded on the .

See Also:

OSI Parameters Get

OSI Parameters Get

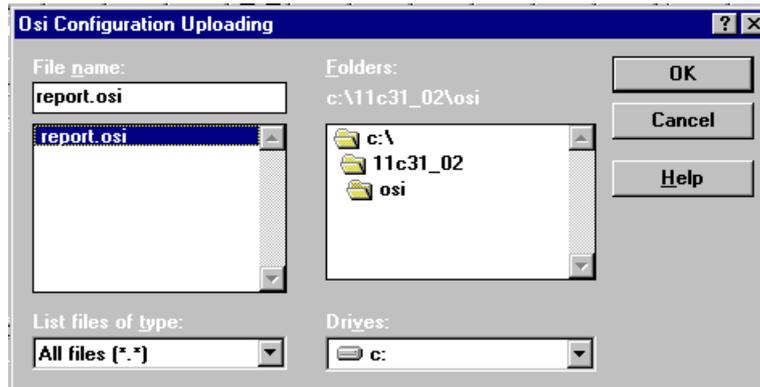
(Configuration -> OSI Configuration-> Read)

This function is used to read the current OSI configuration from the ADM-1.

To read the current OSI configuration:

1. Select the **OSI Configuration-> Read** item, in the **Configuration** menu.

A **File Selection** window will be displayed.



2. Specify, in this selection window, the name of the file, where the OSI configuration parameters will be saved (a file with an **osi** extension is suggested)
3. Confirm the operation by clicking on the **OK** button.

See Also:

OSI Parameters Setup

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