NOKIA

C33525.90_H0
Nokia MetroHub Transmission Node Rel. C3

Monitoring Nokia MetroHub

The information in this documentation is subject to change without notice and describes only the product defined in the introduction of this documentation. This documentation is intended for the use of Nokia's customers only for the purposes of the agreement under which the documentation is submitted, and no part of it may be reproduced or transmitted in any form or means without the prior written permission of Nokia. The documentation has been prepared to be used by professional and properly trained personnel, and the customer assumes full responsibility when using it. Nokia welcomes customer comments as part of the process of continuous development and improvement of the documentation.

The information or statements given in this documentation concerning the suitability, capacity, or performance of the mentioned hardware or software products cannot be considered binding but shall be defined in the agreement made between Nokia and the customer. However, Nokia has made all reasonable efforts to ensure that the instructions contained in the documentation are adequate and free of material errors and omissions. Nokia will, if necessary, explain issues which may not be covered by the documentation.

Nokia's liability for any errors in the documentation is limited to the documentary correction of errors. NOKIA WILL NOT BE RESPONSIBLE IN ANY EVENT FOR ERRORS IN THIS DOCUMENTATION OR FOR ANY DAMAGES, INCIDENTAL OR CONSEQUENTIAL (INCLUDING MONETARY LOSSES), that might arise from the use of this documentation or the information in it.

CE Hereby, Nokia Corporation, declares that these Transmission Node units measured in Nokia MetroHub are in compliance with the essential requirements of the Directive 1999/5/EC (R&TTE Directive) of the European Parliament and of the Council.

UL Complies with UL 1950, CSA 22.2 NO. 950 Information Technology Equipment. This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions. (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Contents

1 Overview of monitoring transmission units

Purpose

The following sections detail how to monitor the transmission units in Nokia MetroHub.

Steps

1. **Monitor transmission unit performance.**
2. **Monitor transmission node temperature.**
3. **Monitor transmission node alarms.**
4. **Configure FXC STM-1 alarm monitoring states.**

2 Monitoring transmission unit performance

Purpose

You can view the statistical information of the FXC units in the manager.

Before you start

The equipment view is open.

Steps

1. **Click the transmission unit that you want to monitor.**

   The corresponding menu opens in the menu bar.

2. **Select Statistics on the menu corresponding to the transmission unit you clicked.**

   The **Statistics** dialogue box opens. Depending on the transmission unit, the appearance of the dialogue box is different. If it is an FXC E1 or FXC E1/T1 unit, it is as follows:

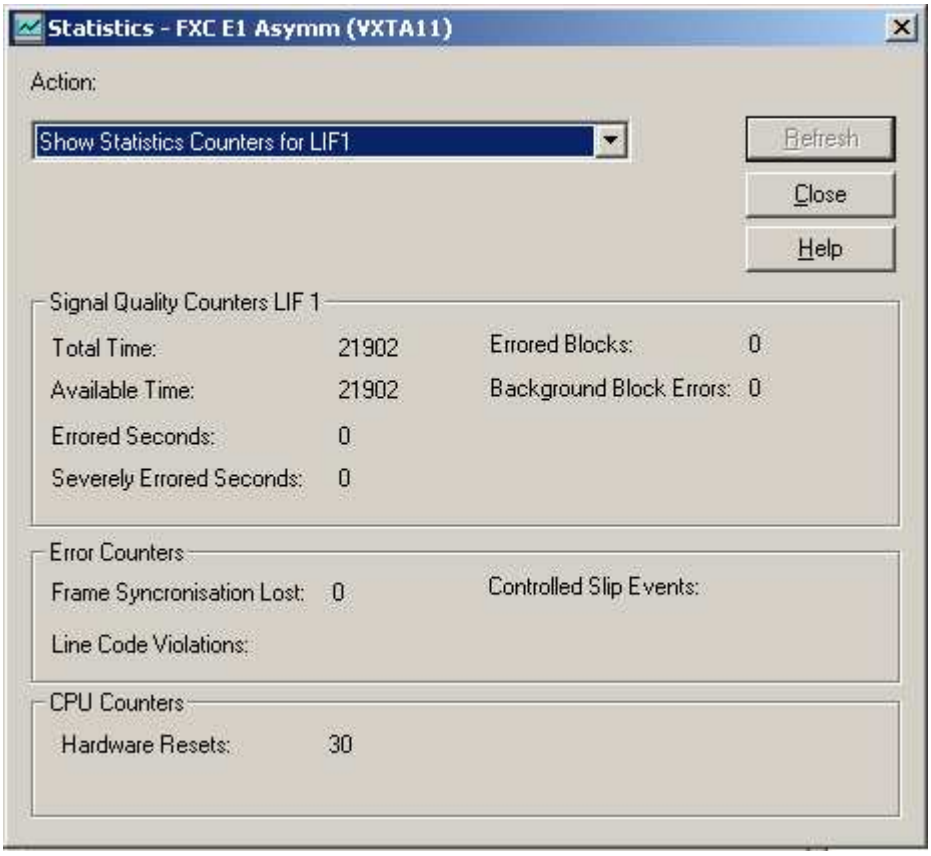


Figure 1. Statistics dialogue box for FXC E1(/T1)

The following figure shows the **Statistics** dialogue box when the transmission unit is FXC RRI.

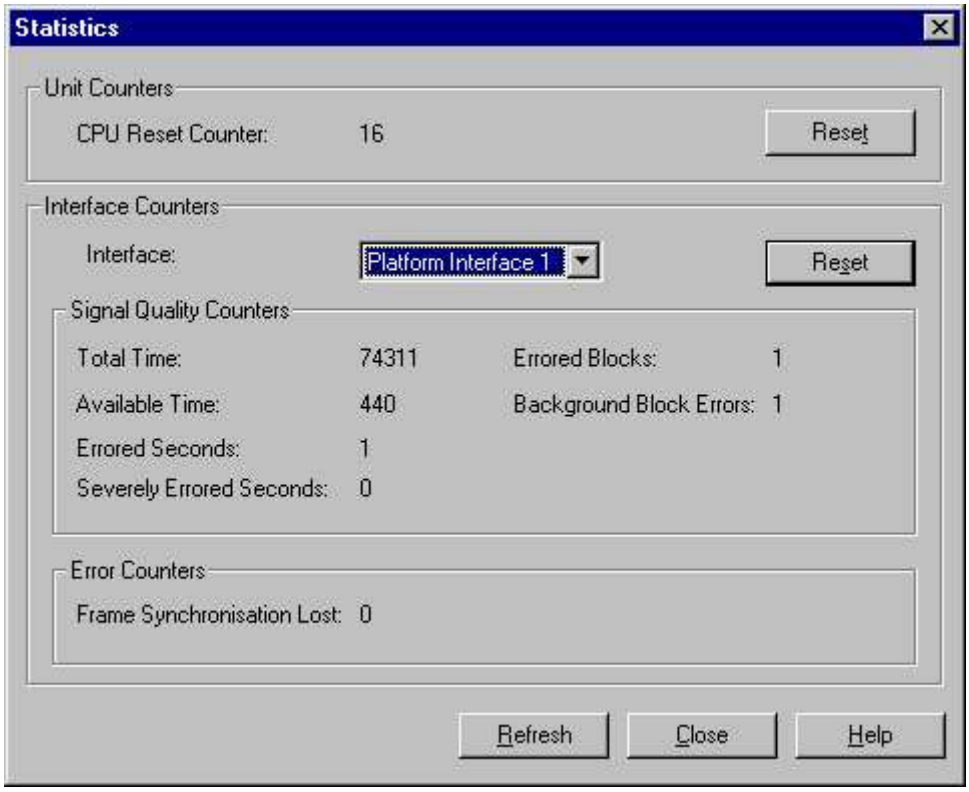


Figure 2. Statistics dialogue box for FXC RRI

The following figure shows the **Statistics** dialogue box when the transmission unit is FXC Bridge.

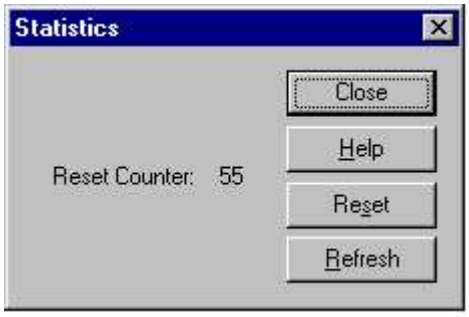


Figure 3. Statistics dialogue box for FXC Bridge

The following figure shows the **Statistics** dialogue box when the transmission unit is FXC STM-1.

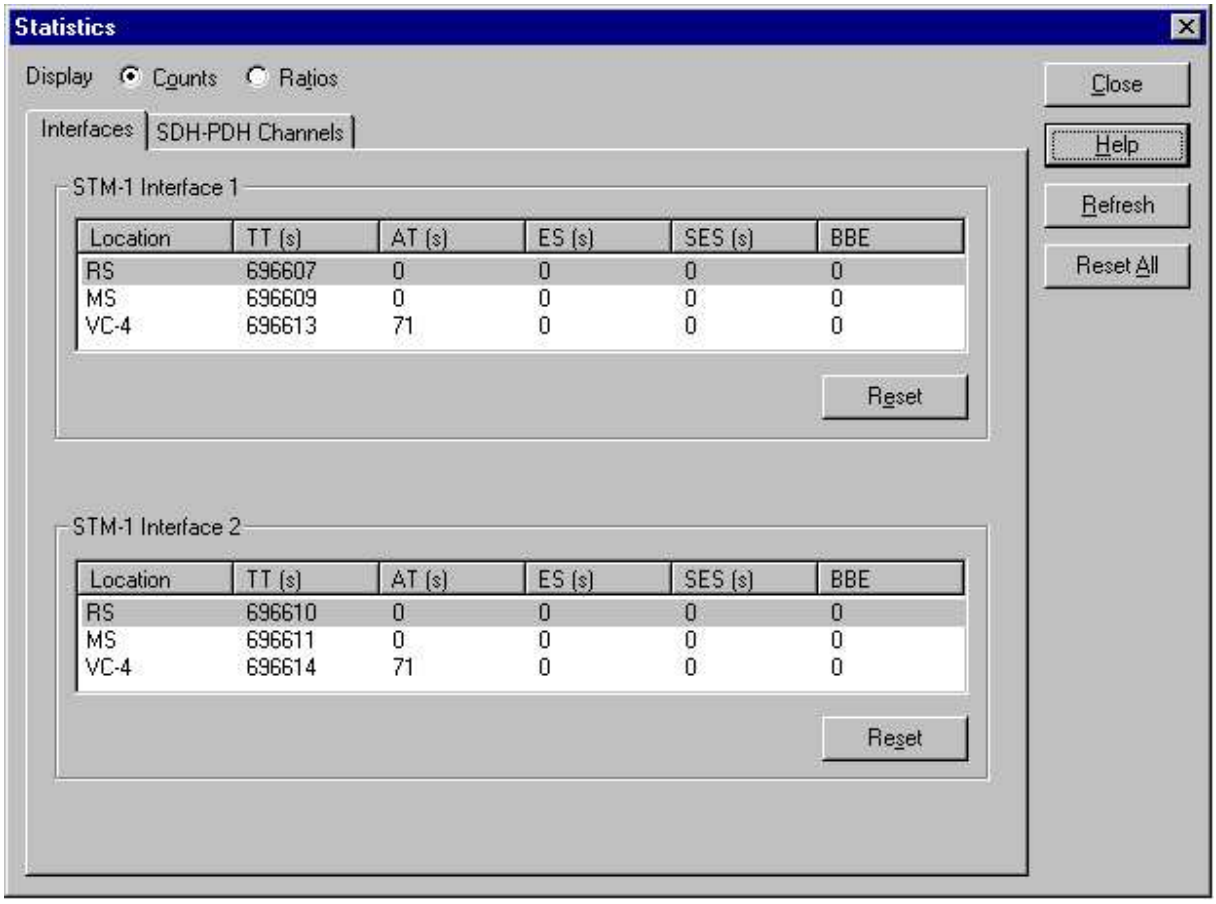
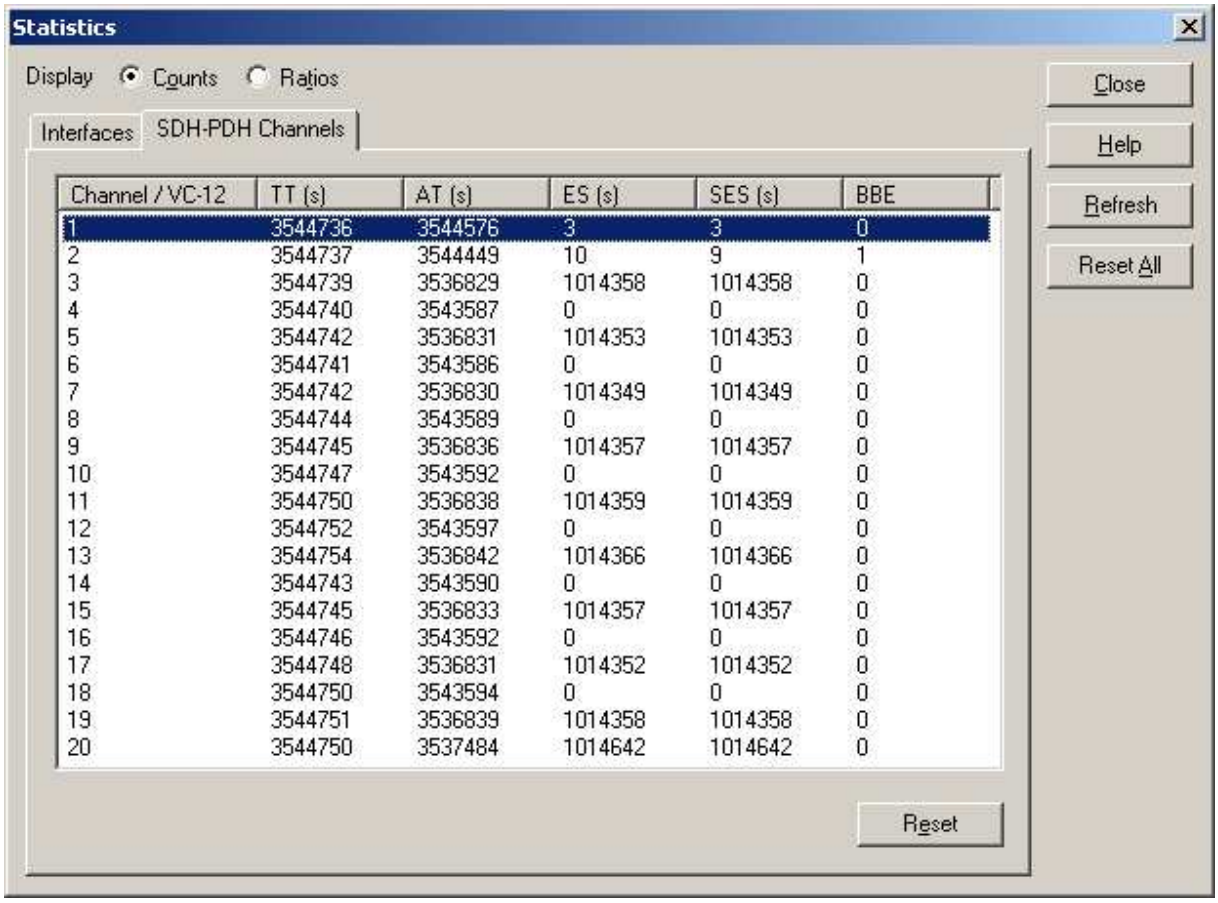


Figure 4. Statistics dialogue box for FXC STM-1 interfaces

The following figure shows the **Statistics** dialogue box when the transmission unit is FXC STM-1 SDH-PDH.



Channel / VC-12	TT (s)	AT (s)	ES (s)	SES (s)	BBE
1	3544736	3544576	3	3	0
2	3544737	3544449	10	9	1
3	3544739	3536829	1014358	1014358	0
4	3544740	3543587	0	0	0
5	3544742	3536831	1014353	1014353	0
6	3544741	3543586	0	0	0
7	3544742	3536830	1014349	1014349	0
8	3544744	3543589	0	0	0
9	3544745	3536836	1014357	1014357	0
10	3544747	3543592	0	0	0
11	3544750	3536838	1014359	1014359	0
12	3544752	3543597	0	0	0
13	3544754	3536842	1014366	1014366	0
14	3544743	3543590	0	0	0
15	3544745	3536833	1014357	1014357	0
16	3544746	3543592	0	0	0
17	3544748	3536831	1014352	1014352	0
18	3544750	3543594	0	0	0
19	3544751	3536839	1014358	1014358	0
20	3544750	3537484	1014642	1014642	0

Figure 5. Statistics dialogue box for FXC STM-1 SDH-PDH channels

The **Reset** button is used to reset CPU, interface, or error counters.

Note

For the FXC E1(/T1), the **Reset** button only appears if you have first selected **Reset Signal Quality Counters**, **Reset Error Counters** or **Reset CPU counters** from the **Action** menu.

Note

For FXC RRI, the **Reset** button resets the counters of all platform interfaces and not only the currently displayed counters.

---

3. **Click Refresh to update the statistical information, (in the case of FXC E1(/T1), select Refresh and click Refresh).**

Note

Statistics are only up-to-date once the **Refresh** button is clicked.

---

4. *If* you want to view the statistics history
   Then

   Select Statistics History from the menu bar.

   The **Statistics History** window opens.

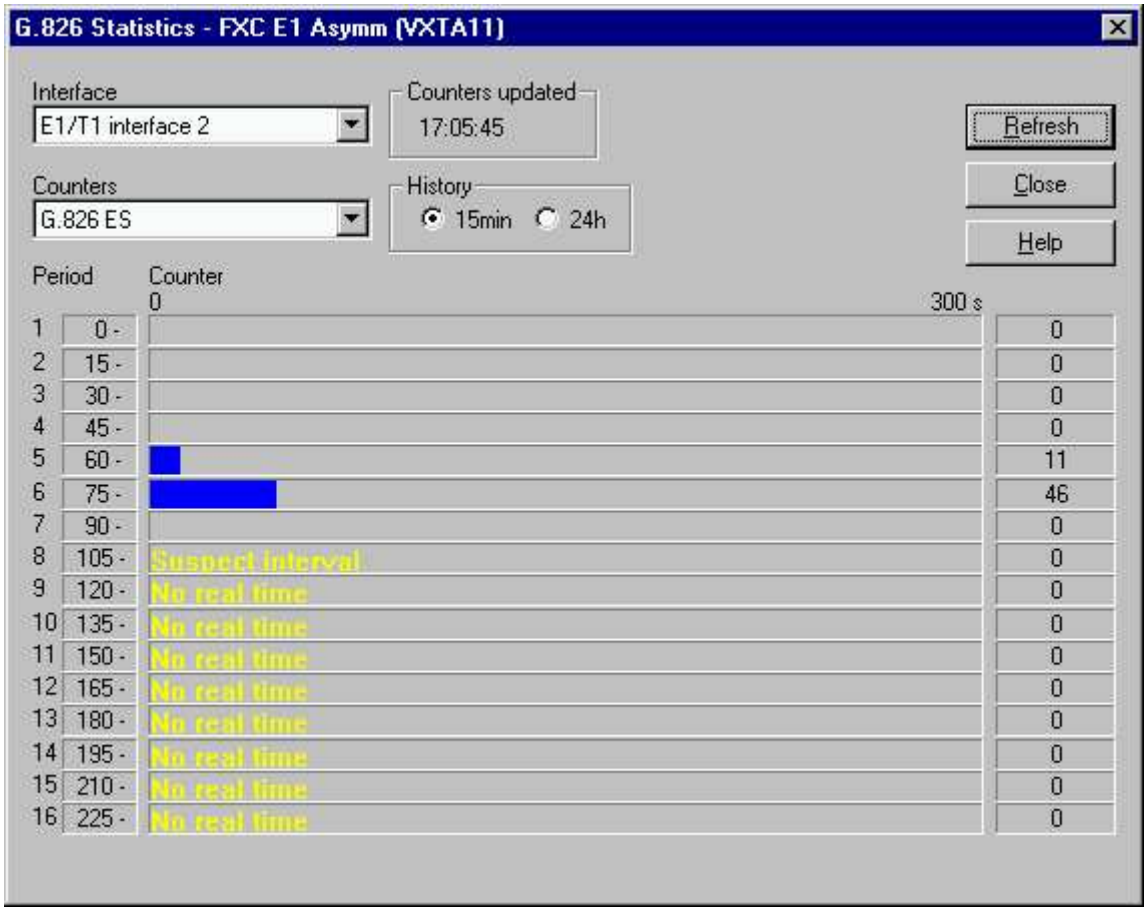


Figure 6. Statistics history for FXC E1/T1

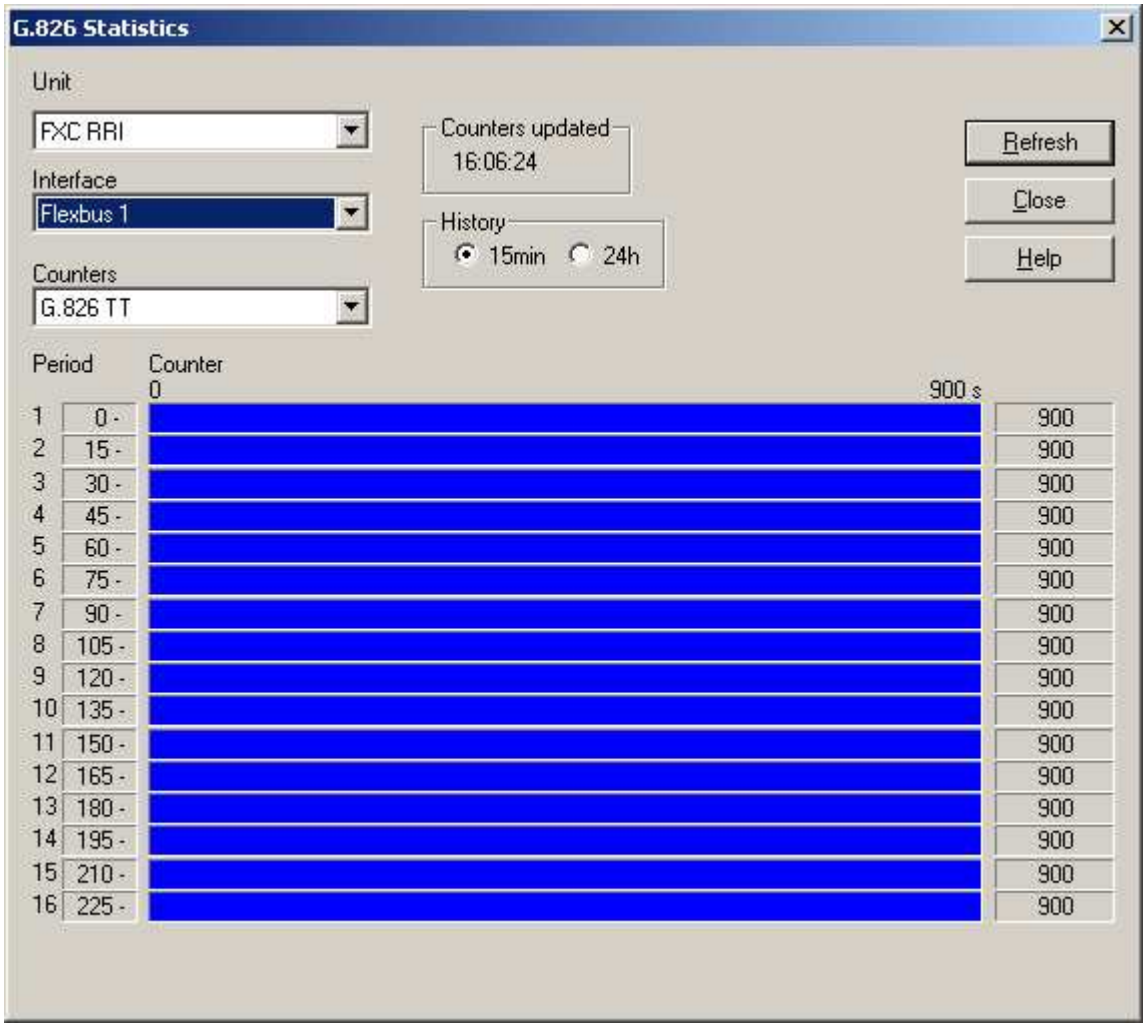


Figure 7. Statistics history for FXC RRI

If a radio outdoor unit is connected to the FXC RRI, the statistics history of the outdoor unit can be displayed as well (see figure below).

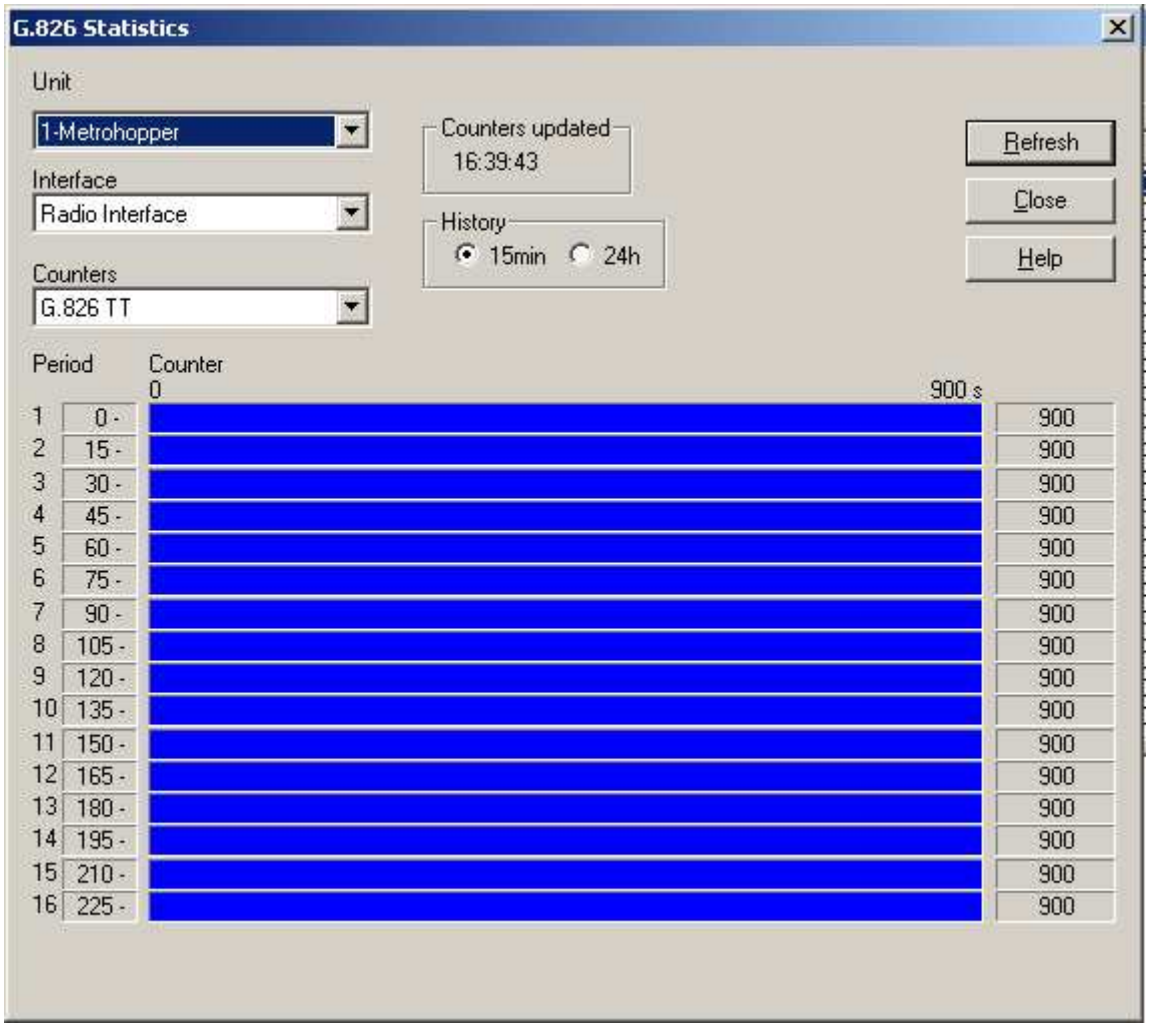
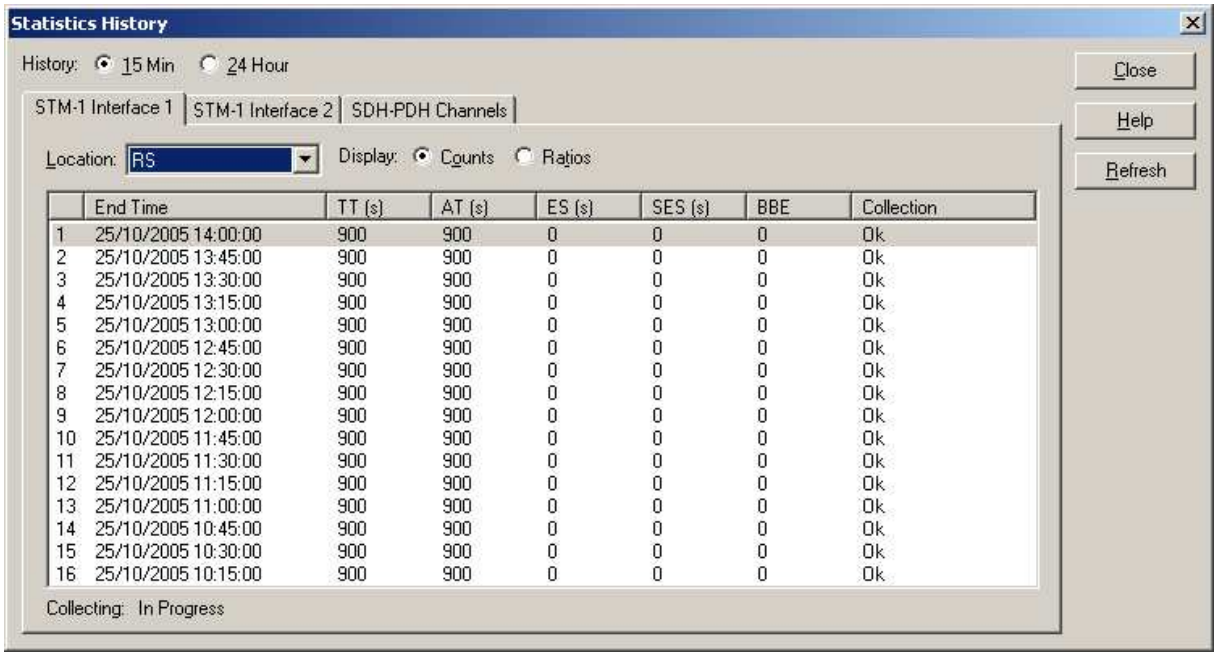


Figure 8. Statistics history for FXC RRI - MetroHopper

The records are displayed top down from the newest to the oldest.



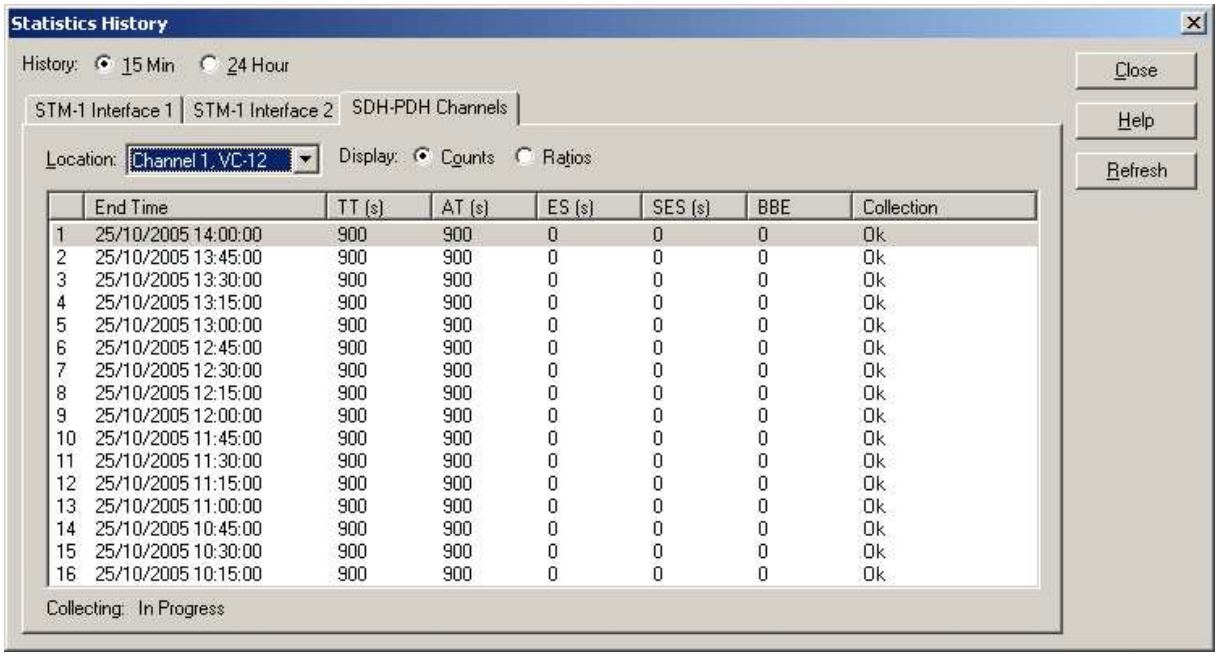
	End Time	TT (s)	AT (s)	ES (s)	SES (s)	BBE	Collection
1	25/10/2005 14:00:00	900	900	0	0	0	Ok
2	25/10/2005 13:45:00	900	900	0	0	0	Ok
3	25/10/2005 13:30:00	900	900	0	0	0	Ok
4	25/10/2005 13:15:00	900	900	0	0	0	Ok
5	25/10/2005 13:00:00	900	900	0	0	0	Ok
6	25/10/2005 12:45:00	900	900	0	0	0	Ok
7	25/10/2005 12:30:00	900	900	0	0	0	Ok
8	25/10/2005 12:15:00	900	900	0	0	0	Ok
9	25/10/2005 12:00:00	900	900	0	0	0	Ok
10	25/10/2005 11:45:00	900	900	0	0	0	Ok
11	25/10/2005 11:30:00	900	900	0	0	0	Ok
12	25/10/2005 11:15:00	900	900	0	0	0	Ok
13	25/10/2005 11:00:00	900	900	0	0	0	Ok
14	25/10/2005 10:45:00	900	900	0	0	0	Ok
15	25/10/2005 10:30:00	900	900	0	0	0	Ok
16	25/10/2005 10:15:00	900	900	0	0	0	Ok

Figure 9. Statistics history for FXC STM-1

A reading of "Suspect interval" in the **Statistics History** window signals that the measurement period was not exactly 15 minutes or 24 hours. This happens when the real time clock in the network element is adjusted more than 10 seconds during the measurement.

By way of example, a measurement interval of 15 minutes 11 seconds, or 24 hours 0 minutes 20 seconds, would result in "Suspect interval" being displayed. A measurement interval of 14 minutes 52 seconds, or 24 hours 0 minutes 8 seconds, would not.

The FXC STM-1 **Statistics History** window contains tabbed pages where you can view statistical history information. The tabbed pages are **STM-1 Interface 1**, **STM-1 Interface 2** and **SDH-PDH Channels**. Figure *Statistics history for FXC STM-1* above shows the statistics history for STM-1 Interface 1. To view statistics for SDH-PDH channels, click the **SDH-PDH Channels** tab.



	End Time	TT (s)	AT (s)	ES (s)	SES (s)	BBE	Collection
1	25/10/2005 14:00:00	900	900	0	0	0	Ok
2	25/10/2005 13:45:00	900	900	0	0	0	Ok
3	25/10/2005 13:30:00	900	900	0	0	0	Ok
4	25/10/2005 13:15:00	900	900	0	0	0	Ok
5	25/10/2005 13:00:00	900	900	0	0	0	Ok
6	25/10/2005 12:45:00	900	900	0	0	0	Ok
7	25/10/2005 12:30:00	900	900	0	0	0	Ok
8	25/10/2005 12:15:00	900	900	0	0	0	Ok
9	25/10/2005 12:00:00	900	900	0	0	0	Ok
10	25/10/2005 11:45:00	900	900	0	0	0	Ok
11	25/10/2005 11:30:00	900	900	0	0	0	Ok
12	25/10/2005 11:15:00	900	900	0	0	0	Ok
13	25/10/2005 11:00:00	900	900	0	0	0	Ok
14	25/10/2005 10:45:00	900	900	0	0	0	Ok
15	25/10/2005 10:30:00	900	900	0	0	0	Ok
16	25/10/2005 10:15:00	900	900	0	0	0	Ok

Figure 10. Statistics history for SDH-PDH channels

The statistics history is not supported by the FXC Bridge unit.

5. *If* you want to view the OU Rx level records
   Then

   on the FXC RRI menu, select Measurements.

   The **Select measurements** dialogue box appears.

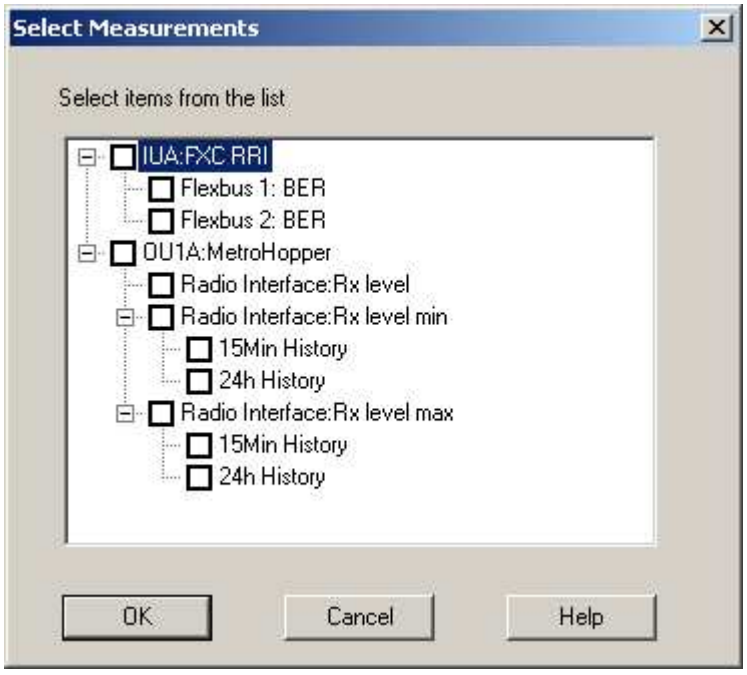


Figure 11. Select Measurements dialogue box

Check the measurements you want to view and click **OK**. The **Measurement** window opens displaying the selected measurements.

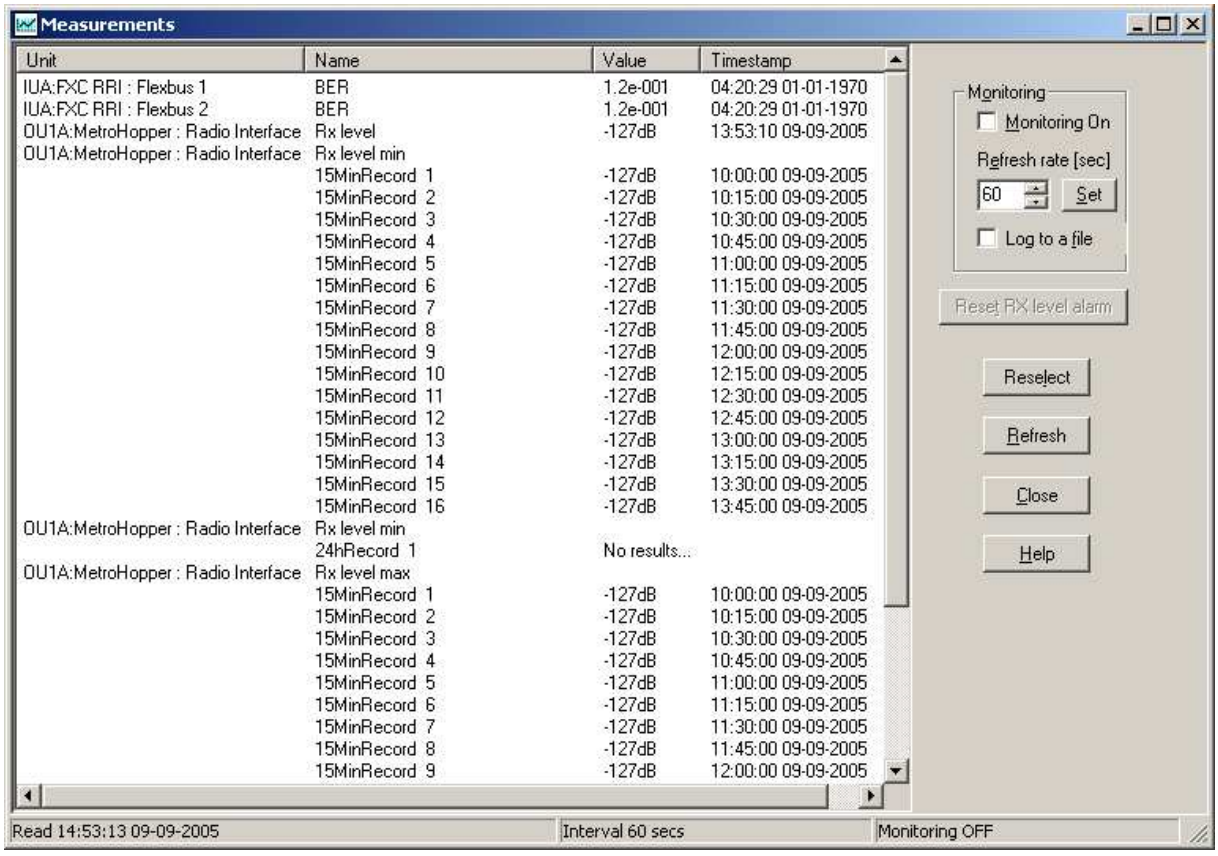


Figure 12. Measurements window

The measurement results will be refreshed automatically if the **Monitoring On** check box is checked. You can also set the refresh rate.

3 Monitoring transmission node temperature

Purpose

The temperature information of the node can be viewed in the manager.

Steps

1. **Select Maintenance → Temperature Monitoring.**

   The **Temperature Monitoring** window opens.

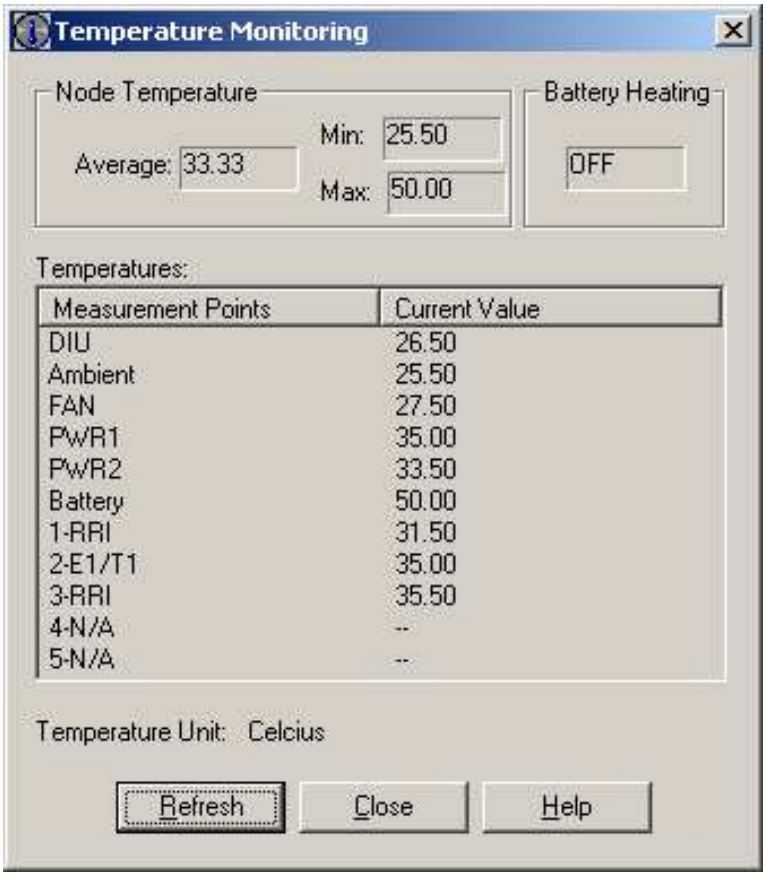


Figure 13. Temperature Monitoring window

2. As necessary, click Refresh to obtain the latest values.

4 Monitoring transmission node alarms

Purpose

UltraSite BTS Hub or Nokia MetroHub Manager can monitor a number of different alarms that occur in the node.

Before you start

Before you can see STM-1 alarms, you must enable/disable alarm monitoring in the **Alarm Monitoring States** window. See *Configuring FXC STM-1 alarm monitoring states* for details.

Summary

The manager provides the following information about any alarm that has occurred in the node:

- **Severity** - severity class of the alarm
- **Location** - unit the alarm is located in
- **Description** - brief description of the alarm
- **Time stamp** -date and time when the alarm was detected
- **Code** - fault code of the alarm
- **Activation** (in the alarm history view) – indicates if an alarm is active or cancelled

The unit alarm status in **Equipment View** is visible only when the **Alarms** window is open and alarm polling on.

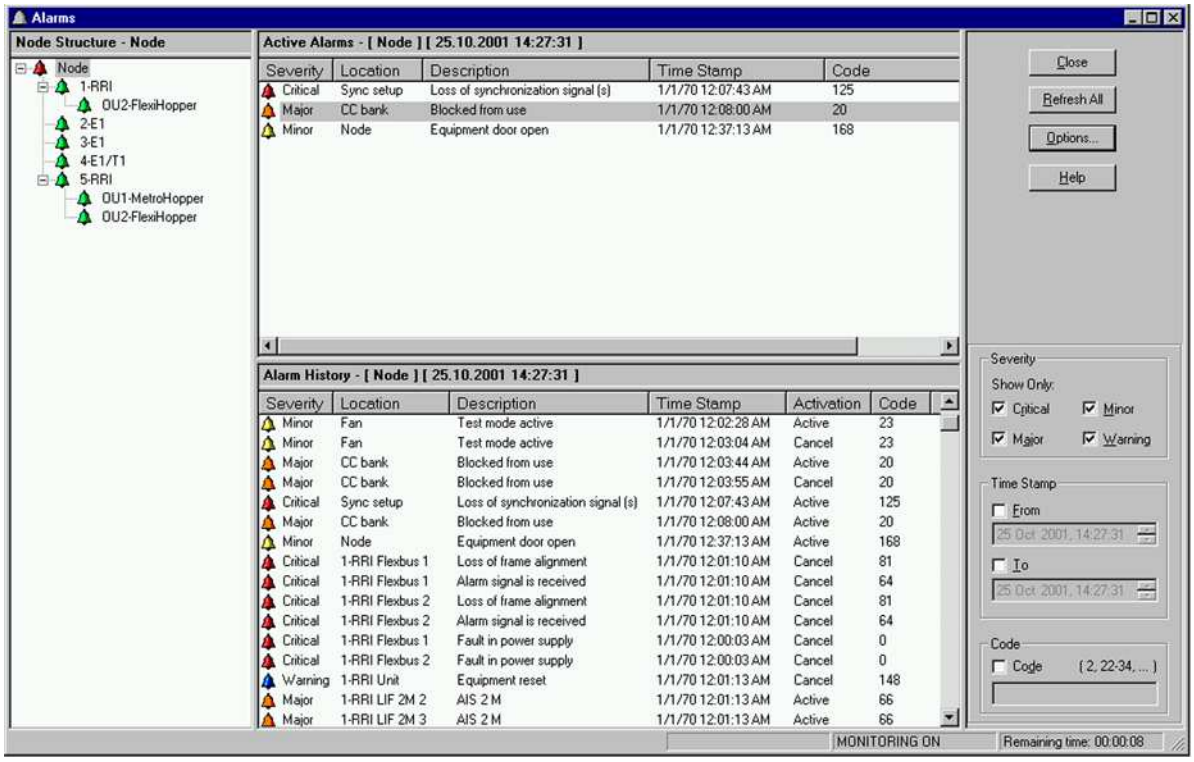


Figure 14. Alarms window

Note

If the alarm(s) and the alarm history of a unit cannot be read, the state is *Missing unit* in the **Equipment** view.

If alarm history is not displayed, select the option button to enable the alarm history.

Caution

Avoid setting the alarm monitoring delay to a very small value when monitoring a network element remotely. This places a strain on the Q1 bus resources and causes delays for other activities.

Severity

Severity shows the severity class of the alarm as it appears in the node manager.

Colour codes of the alarms

The alarms are colour-coded according to the **Severity** of the alarm.

Table 1. Colour codes of the alarms

Severity	Symbol	Colour
Critical (***)		Red
Major (**)		Orange
Minor (*)		Yellow
Warning (W)		Blue

Location

The **Location** field indicates which unit or interface is producing the alarm.

By default the alarms are listed by **Time stamp**. You can sort the alarms by clicking on the column heading in the window. To sort the alarms in reverse order, click a heading a second time.

Description and code

The alarm descriptions give the following information:

Title row shows the fault code and the alarm name.

Severity shows the default severity class of the alarm as it appears in the node manager.

- *Critical* is used to indicate a fault situation that requires immediate measures. A critical alarm indicates possible service degradation.
- *Major* is used to indicate a fault situation that requires some measures during normal working hours.
- *Minor* is used to indicate a fault situation that does not require any measures. The alarm is cancelled when the fault situation is cleared.
- *Warning* can be used to provide information. A warning is not an alarm, and it does not indicate a fault. Warnings are not cancelled.

Note

Alarm severity can be modified in the Alarm Properties dialogue box. The modified alarm severity is visible in the local manager alarm window. The alarm is reported to the NMS and BSC with an alarm code. Local alarm severity modification does not override global severity settings in the NMS or BSC.

Fault reason gives the possible cause of the alarm.

Description contains location and consequence information. *Location* shows the unit and block indicating the alarm. *Consequence* shows whether an indication signal is sent upstream or downstream.

Instructions gives instructions on how to remedy the fault.

Cancelling gives instructions on how the alarm is cancelled.

Note

For information on how to replace units or carry out other maintenance tasks, please refer to the instructions in this documentation.

Steps

1. Open the alarms window.

Steps

a. Select Alarms → View.

The **Alarms** window opens and a list of active alarms, the node structure view, and the filter view are shown.

2. Open the alarm history view.

Steps

a. Click the Options button in the Alarms window.

The **Alarm Options** window opens.

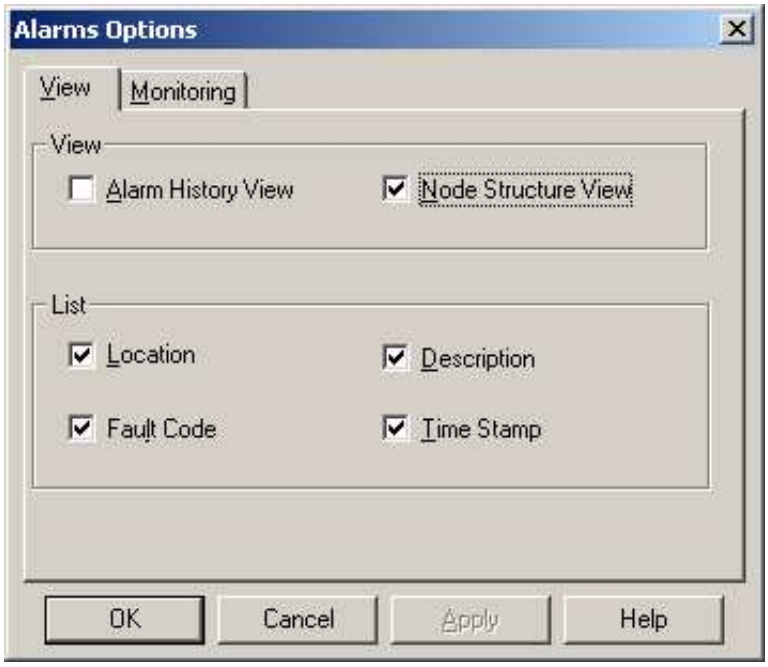


Figure 15. Alarm Options window, View tab

b. Tick the Alarm History View box in the View tab.

c. Click OK.

The alarm history view opens.

Further information

Past alarms which have occurred in the network element are shown in the **Alarm History** window (i.e. the alarm polling history). The alarm history view contains a header that shows the location and time of the last refresh, that is, when the currently shown events were last read.

You can sort the alarm history by clicking the column heading in the window. Every time the column is clicked, the sort order is reversed.

The **Activation** field lists if an alarm is active or if it has been cancelled.

Note

The alarm history is saved as a text file with the extension .alr and has to be opened with a text editor.

---

3. Keep the list of active alarms updated by enabling alarm monitoring.

Steps

a. Click Options in the Alarms window.

The **Alarm Options** window opens.

b. Click the Monitoring tab.

The **Monitoring** tab of the **Alarm Options** window is displayed.

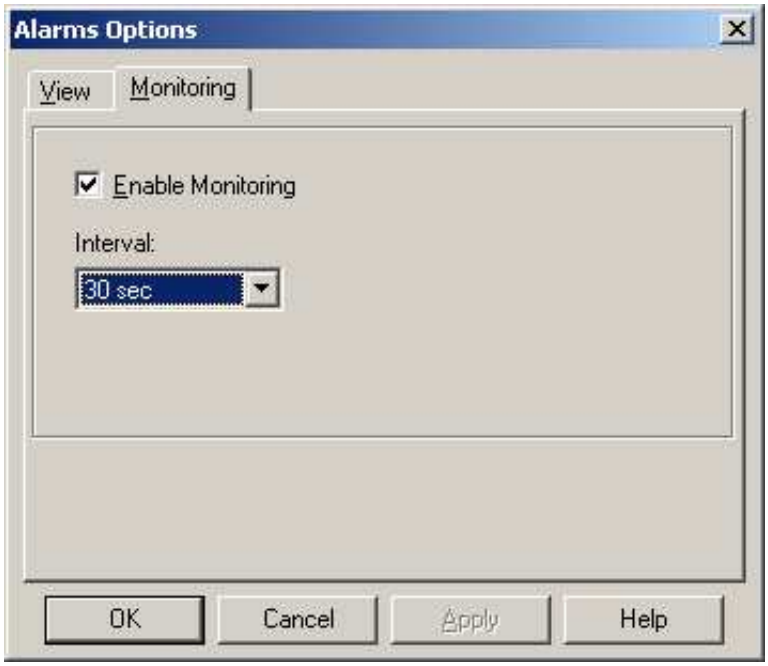


Figure 16. Alarm Options window, Monitoring tab

c. Tick the Enable Monitoring box.

d. Select the desired interval.

e. Click OK.

Remaining time clock indicator in the right bottom corner shows the interval progressing.

Further information

The most critical alarms of the FXC units are shown as bell symbols in the node structure view. The bell symbols show the colour corresponding to the highest severity of the alarms present in the unit in question. For example, if the most severe alarm is a critical alarm, the bell symbol is red.

When monitoring is enabled, the LED states are also updated in the **Equipment** window.

4. Refresh active alarms and alarm history.

Steps

a. Click the Refresh All button in the Alarms window.

The information in the **Alarms** window and alarm history view is updated.

5. Select filtering options.

Summary

The filter options are located on the right hand side of the alarms window. You can select the alarms to be displayed according to severity, time stamp, and code.

Steps

a. Tick the desired filtering options.

For example, if you only want to be notified about critical and major alarms, tick only those boxes.

Only the selected alarms are displayed in the alarms window.

6. Change the alarm list options.

Steps

a. Click Options in the Alarms window.

b. In the View tab, select the columns you want to be displayed in the alarms window.

c. Click OK.

Only the selected columns are displayed in the alarms window.

Further information

By right-clicking the mouse, you can open a pop-up menu for sorting and viewing alarms.

5 Configuring FXC STM-1 alarm monitoring states

Purpose

You can enable/disable alarm monitoring in the Alarm Monitoring States window.

Note

Current alarms are managed under the UltraSite BTS Hub Manager or MetroHub Manager Alarms menu.

Alarm monitoring means checking the status of determined alarm sources at regular intervals. Alarms are not be visible if alarm monitoring is off (the default state is off).

You need to activate alarm monitoring separately for each interface (STM-1 interfaces 1 and 2, payload for interfaces 1 and 2, and the 20 SDH-PDH channels) to receive alarms.

Before you start

Note

In alarm description tables, an asterisk (*) before the alarm name means that the alarm is masked when alarm monitoring is off (for example *Loss of pointer).

Steps

1. **Click FXC STM-1 → Alarm Monitoring States to open the window (see the following figure).**

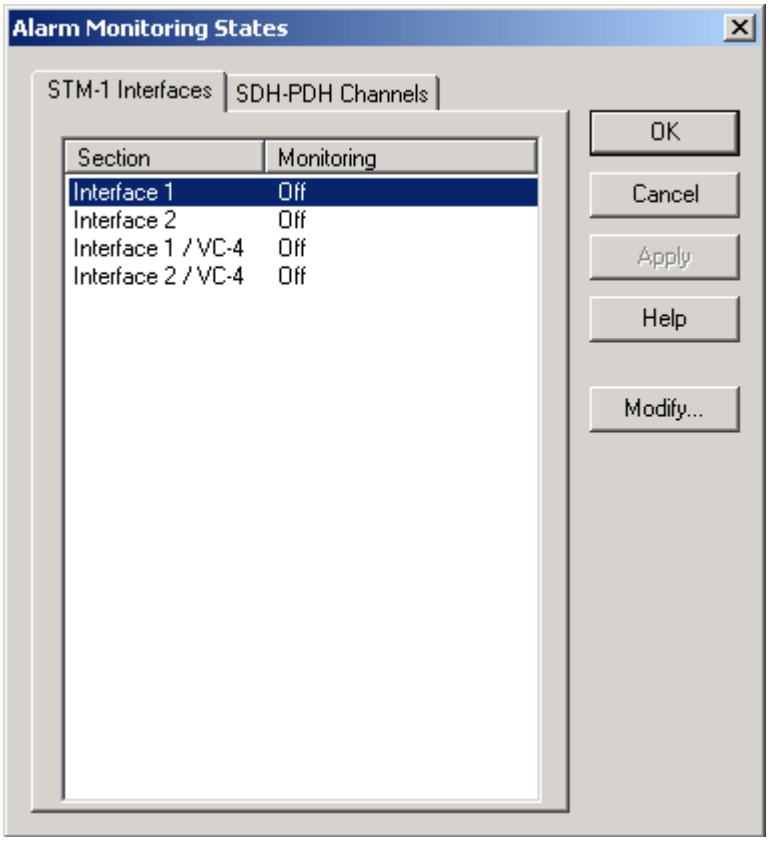


Figure 17. FXC STM-1 Alarm Monitoring States, STM-1 Interfaces

2. **Click the tabs (STM-1 Interfaces / SDH-PDH Channels) to switch between the pages.**

3. **On the STM-1 Interfaces page, select the section you want to modify by clicking it.**

   Select the section/sections you want to modify by clicking. To select multiple sections, hold down the Ctrl key or the SHIFT key on your pc keyboard while clicking.

4. **Click Modify to open the dialogue box.**

5. **Switch alarm monitoring on/off by selecting/clearing the Monitoring box.**

6. **Click OK.**

7. **Send the changes to the node by clicking Apply on the Alarm Monitoring States window.**

8. **In the SDH-PDH Channels page, select the channel/s to be modified by clicking them.**

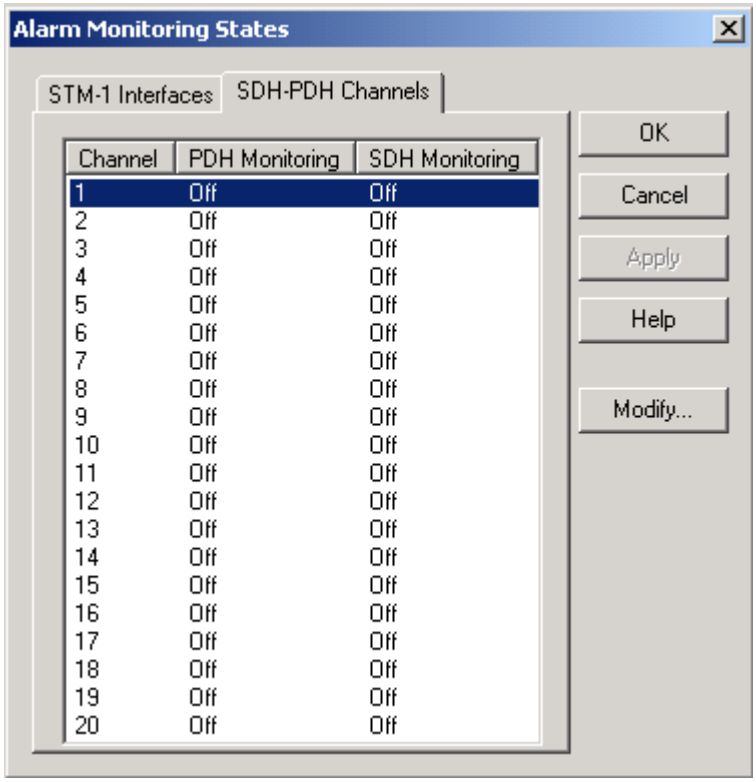


Figure 18. STM-1 Alarm Monitoring States, SDH-PDH Channels

9. **Click Modify to open the dialogue box.**

10. **Switch alarm monitoring on/off by selecting/clearing the SDH and/or the PDH box.**

11. **Click OK.**

12. **Send the changed settings to the node by clicking Apply on the Alarm Monitoring window.**

13. **Click OK to close the window.**

Related Topics

Overview of monitoring transmission units

Instructions

Monitoring transmission unit performance

Monitoring transmission node temperature

Monitoring transmission node alarms

Configuring FXC STM-1 alarm monitoring states