



## **TraceInfo Client Help File**

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# 1 TraceInfo Client

## NovaTec TraceInfo Client Helpfile 6.4

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## 1.1 Introduction

### Introduction

Welcome to TraceInfo Client help. The NovaTec Trace Info Client application is a software tool that can be used in conjunction with the Novatec Splitter, Novatec NMG and NovaTec ALCR (called **target system** throughout this help file). It is designed mainly for diagnostic and monitoring purposes and can connect to the respective target system in various ways (e.g. LAN or ISDN) using the NovaTec Network Services.

The following features are available

- Creating and downloading of Trace and Log files from the target system
- Converting the (binary) Traces and Logs to ASCII text files for viewing
- Updating the target systems firmware
- Initiating a reset of the target system
- Viewing the target systems information (firmware version, board types etc.)
- Real time monitoring of the systems Layer 1, 2 and 3 states, NLP information
- Viewing the budget lists, and ASR statistics of the GSM SIM cards and channels

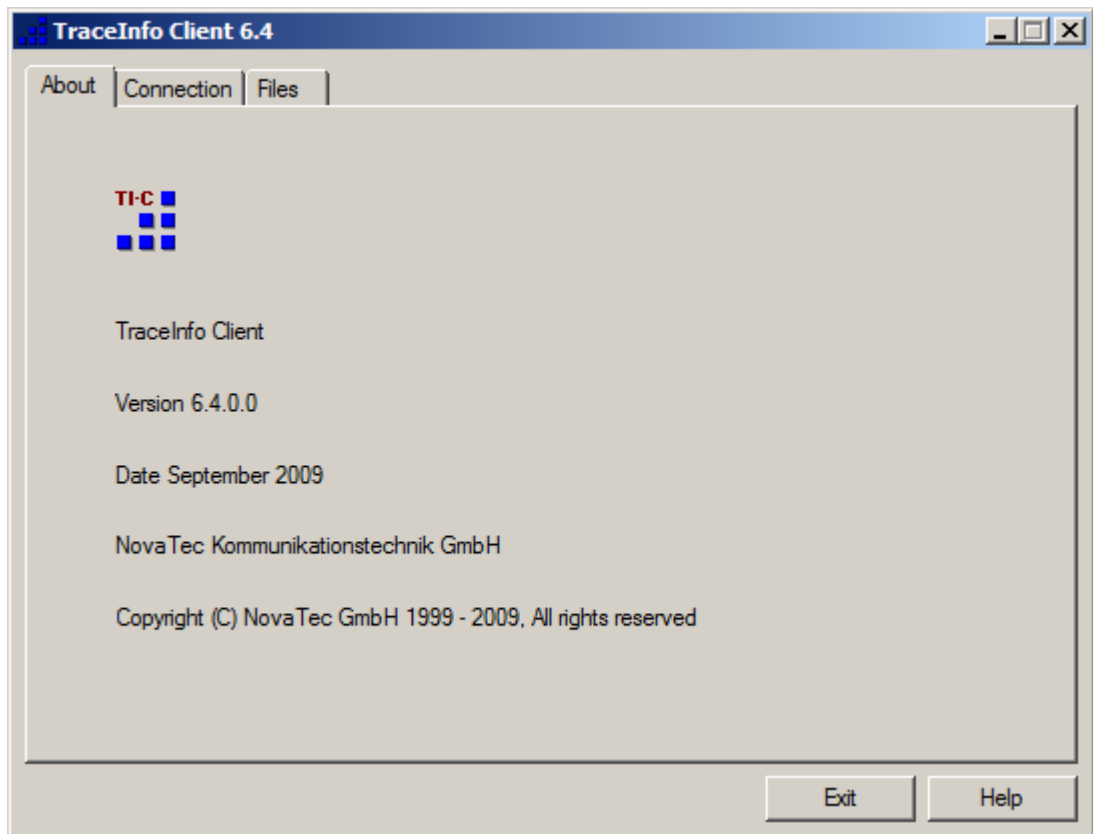
#### Note

To use the TraceInfo Client, the NovaTec network services must be running and configured correctly.

## 1.2 The "About" page

### The "About" page

On this page version and copyright information is displayed



#### Note

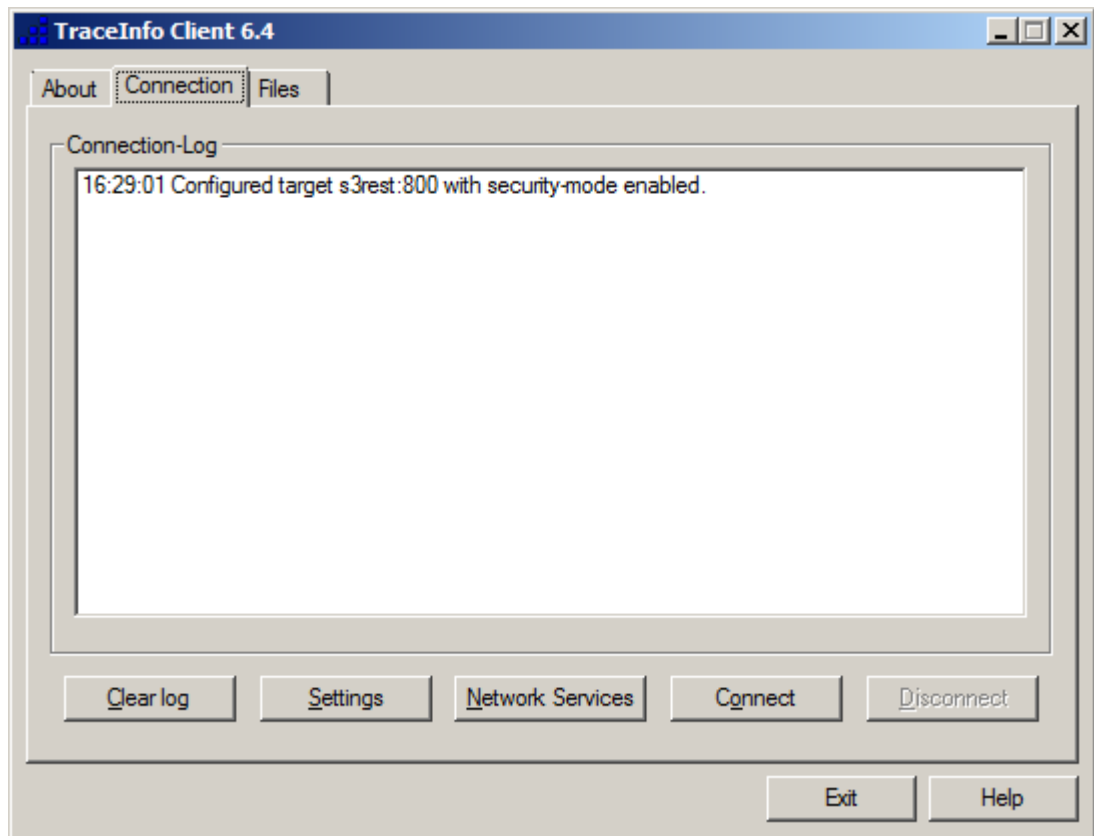
You can also check an applications version information by carrying out the following steps

- Locate the file "**NtticInt.exe**" using the Windows Explorer
- Click on the file with the right mouse button
- From the context menu choose Properties
- In the dialog that appears, select the "**Version**" tab

## 1.3 The "Connection" page

### The "Connection" page

The "Connection" page is used to connect the local PC to the NovaTec target system.



#### Connection-Log

This window shows the various information concerning the connection, and the messages sent and received to and from the target system

#### Clear log

Clears the **Connection-Log** window

#### Settings

The Settings button displays the [Network options dialog](#) which allows changing of the options to connect to the Network services.

#### Network Services

Starts the NovaTec Network Services on the local PC

**Connect**

The Connect button displays the [Establish Connection dialog](#). This dialog primarily serves to connect to the desired target system but also allows for modifying the target systems user name and/or password

**Disconnect**

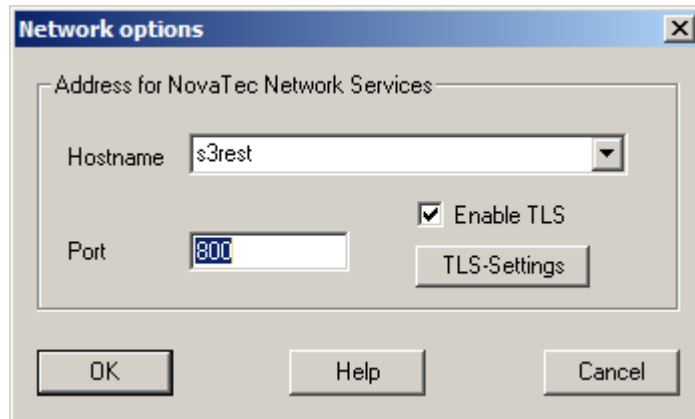
Use this button to end a connection. It is enabled/disabled according to the current state of the connection



### 1.3.1 Network Options

## Network options

On the Network options dialog you can modify the IP address of the computer that is running the NovaTec Network services.



#### Hostname

The host name of the PC running the NovaTec Network services. If the Network Services are running on the same PC as the TracInfo Client, then the IP address of the PC may be entered here, or the standard IP address (127.0.0.1) or the text "localhost" (without the quotes). In case of connecting directly with TCP/IP or SSL/TLS to the target-system, you may enter the IP-Address or hostname of the target-system.

#### Port

The port on which the Network Services are running. The standard is 800, which **should not** be changed unless otherwise stated by the NovaTec support team. Depending on the [connection scenario](#) that applies, the value of Host name should be set as follows. Your PC is connected directly to the target system via the V24 interface

Your PC is connected directly to the target system via ISDN and the ISDN adapter is also installed on the local machine **Host name** localhost **Port** 800. The PC running the Network Services is only accessible via LAN or internet. This remote PC is in turn connected via the V24 interface to the target system. **Host name** The IP address of the PC running the Network Services **Port** 800

#### Note

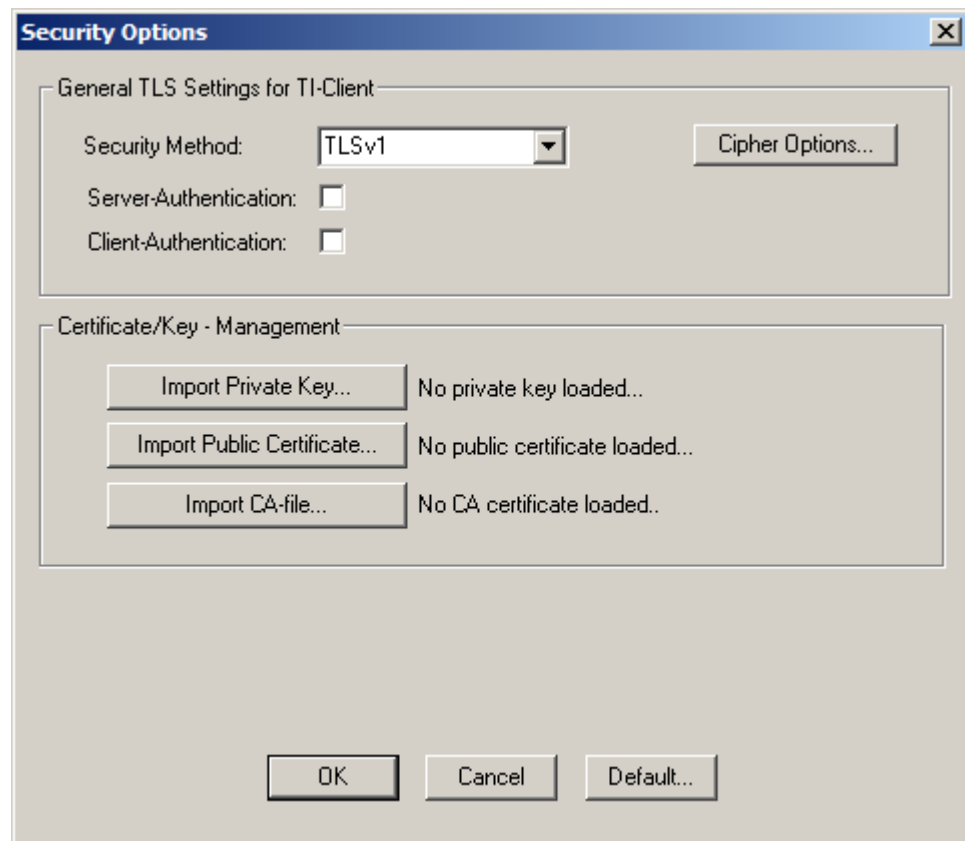
The NovaTec Network services are crucial to all NovaTec software for establishing a connection to the target system, since they provide the necessary software protocol layer for communication to take place. Before any connection attempt is made, you must ensure that they are properly installed and configured, accessible and running.

#### Enable TLS

If you want to use secured TCP/IP-communication with the NovaTec-system, i.e. SSLv3 or TLSv1 over TCP/IP, enable secure-communication by activating the check mark "Enable TLS". The button "TLS-Settings" will be enabled.

## TLS

To configure and set up secure-communication, press the button "TLS-Settings". The following dialog appears.



### Security Method

Choose the required security protocol for secure communication, either SSLv3 or TLSv1.

### Server-Authentication

If you want the server to prove his identity to the client during the communication setup, enable the check mark "Server-Authentication".

### Client-Authentication

If you want the client to prove his identity to the server during the communication setup, enable the check mark "Client-Authentication".

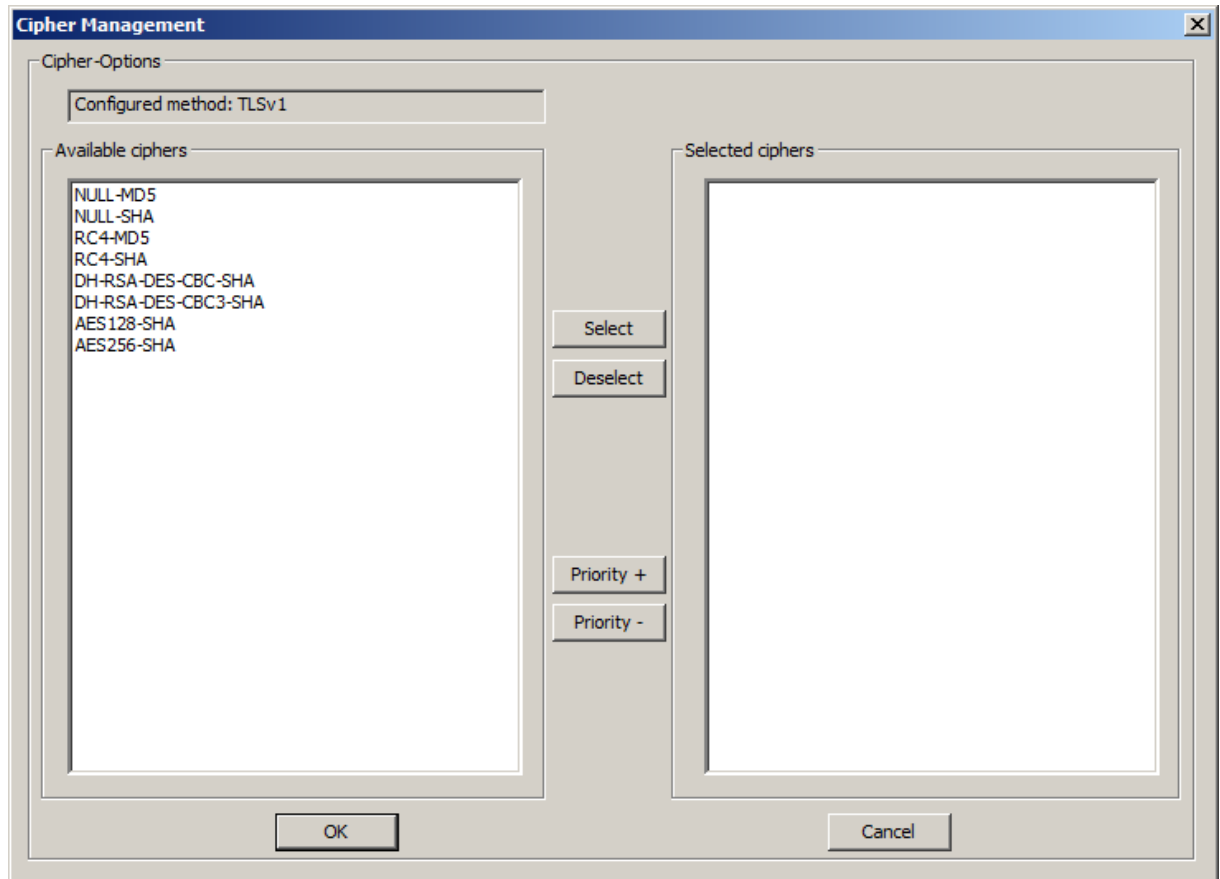
#### Note:

Server- and Client-Authentication are used to prevent "man-in-the-middle-attacks".

## Cipher Options

By clicking on "Cipher Options..." a dialog appears, displaying in the left part of the dialog a selection of available ciphers for secure communication. The selection of available ciphers depends on the configured security method.

The right part display the selected ciphers, used in your configuration for secure communication.



If none of the available ciphers is listed in the right window and you decide not to select at minimum one of the available ciphers in the left window, i.e. the right window remains empty, the system determines itself the "best" cipher respectively the most secure and compatible cipher during communication setup.

In the case you want to restrict the selection of the used ciphers, select the desired cipher in the left window and press "Select". The selected cipher will be removed from the list of available ciphers and will be added to the selected ciphers in the right window. Repeat this step for every desired cipher.

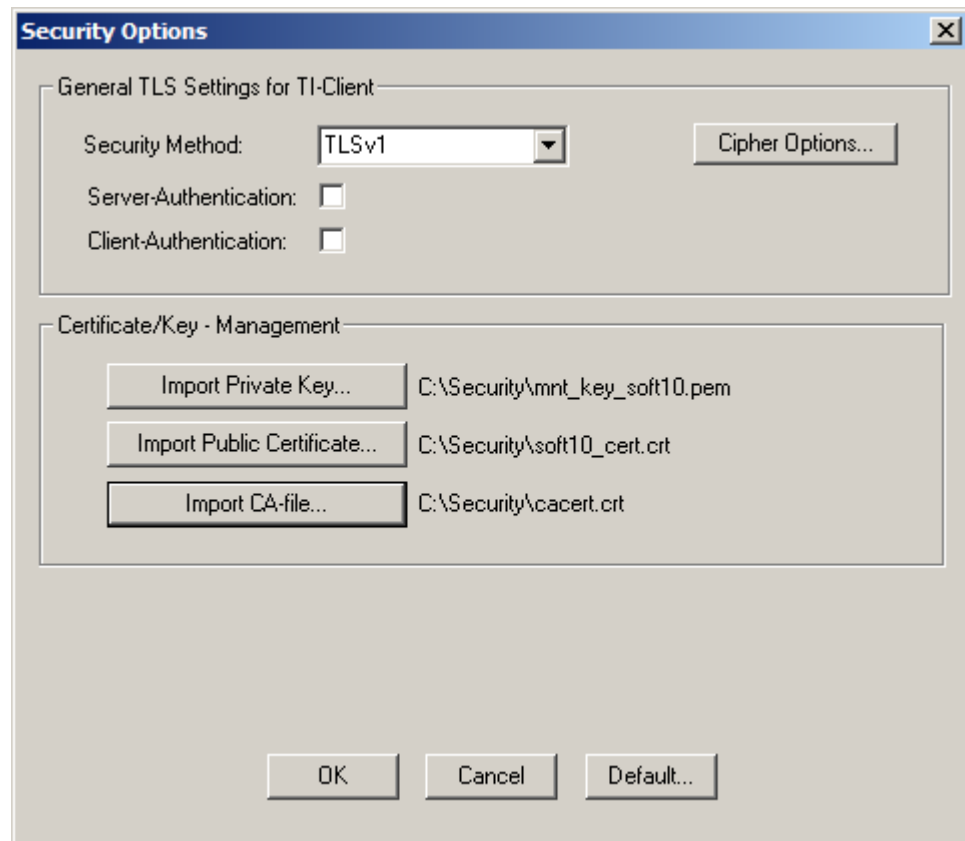
After making your selection of ciphers, it is necessary to define the priority of the several selected ciphers. This will be done by rearranging the order of the selected ciphers in the right window. The higher the position of the cipher in the list the higher is the priority of the cipher to be elected to communicate.

To change the priority of a cipher, select the cipher in the right window and press the button "Priority +" respectively "Priority -".

After making your settings, leave this dialog by pressing "OK".

## Certificate/Key-Management

SSL/ TLS uses keys and certificates to identify the communication partners and to encrypt/decrypt the communication with these keys and certificates between the involved communication partners. The first communication partner is the NovaTec-System, the second will be represented by the PC-Application, in this case the application "TraceInfo Client". For this reason, it is necessary to declare the required maintenance-keys and maintenance-certificates for "TraceInfo Client".



To declare the private-key, dedicated for maintenance, press the button "Import Private Key...". A file-dialog appears allowing you to locate the private-key file within your filesystem. By selecting and opening it, the path to private-key file will be stored in the configuration.

To declare the public-certificate, dedicated for maintenance, press the button "Import Public Certificate...". A file-dialog appears allowing you to locate the public-certificate file within your filesystem. By selecting and opening it, the path to the public-certificate file will be stored in the configuration.

To declare the public-certificate of the desired CA (certification authority), press the button "Import CA-file...". A file-dialog appears allowing you to locate the public-certificate file within your filesystem. By selecting and opening it, the path to the public-certificate file will be stored in the configuration.

**Note:**

To reset the TLS-Settings to default, press the button "Default...".

**Attention:**

If SSL/TLS is **not** already activated in the NovaTec-System and you try to connect with SSL/TLS enabled, no connection to the system will be available.

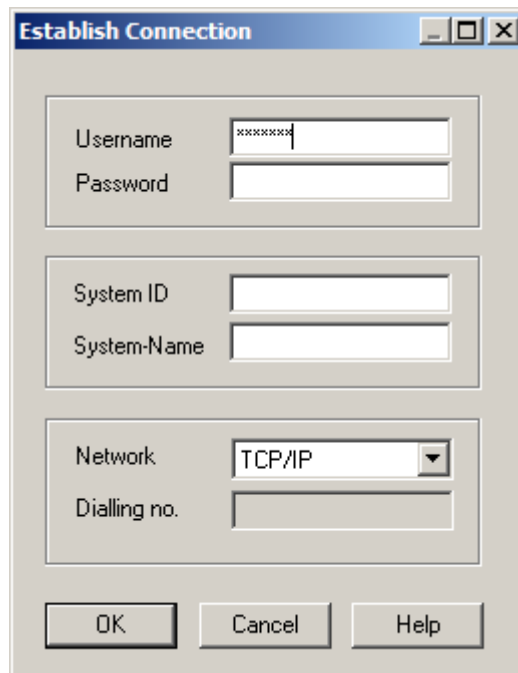
Vice versa if SSL/TLS is already activated in the NovaTec-System and you try to connect with SSL/TLS disabled, no connection will be available.

After making your changes, leave the dialog by pressing "OK". Now you have set up "TraceInfo Client" to communicate in a secure way with the NovaTec-System.

### 1.3.2 Establish Connection

## Establish Connection

After clicking on the button marked **Connect** on the ["Connection" page](#) this dialog appears.

The image shows a Windows-style dialog box titled "Establish Connection". It contains several input fields and buttons. The fields are organized into three groups: 1. Username and Password: Two stacked text boxes. The Username box contains "xxxxxx" and the Password box is empty. 2. System ID and System-Name: Two stacked text boxes. Both are empty. 3. Network and Dialling no.: A dropdown menu for "Network" showing "TCP/IP" and a text box for "Dialling no." which is empty. At the bottom are three buttons: "OK", "Cancel", and "Help".

#### Username

Enter the username here. The default is **"technik"** without the quotation marks.

#### Password

Enter the password for the target system here. If you have not previously changed this, no password is required. To change the password first enter the old password, followed by a semi-colon(;), then the new password followed by another semi-colon and, for confirmation, the new password once again.

Example oldpassword; newpassword; newpassword If you forget the password, to delete the password in the target system enter into the password the following text **"NOPASSWD"** The password **AND** the configuration will be deleted in the target system. The target system will then run in the default mode.

#### System ID

Enter the System ID here. The System ID is a 12 digit ID number. If you do not know the System ID, then enter a question mark in this field, and when the target system is contacted, the System ID will be shown in the page ["Device"](#).

#### System-Name

Enter the name of the target system here. To change the name of the system, enter either a question mark, or the System ID in the field **System ID** and enter the new name. This name will appear in subsequent connections on the page ["Device"](#).

**Network**

Choose the type of network connection that is to be used to contact the Network Services. The available choices are **TCP/IP**, **V.24**, **USB** or **ISDN Dialling No.**

Enter the number of the PC to be contacted that is running the Network Services. This option is only available when the Network is set to **ISDN**.

**Note**

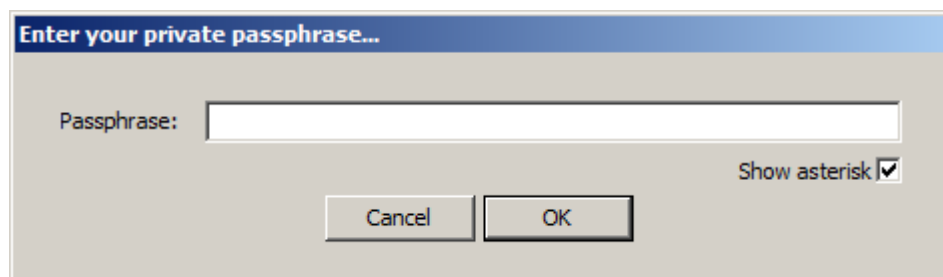
The target of the ISDN number must have an ISDN adapter that is CAPI 2.0 compatible. A good choice of ISDN adapter is that of the AVM-Fritz Card.

After confirming all the entries by clicking on the **OK** button, you can see the status of the connection in the [Connection-Log window](#). The message "Connection established successfully" indicates that connection works and that the target system is responding.

After editing the required options and clicking "OK" the transmission of the configuration starts.

**Secure-mode (SSLv3/TLSv1) only:**

In case of enabled secure-communication, the following dialog will appear, allowing you to enter your private passphrase of your private-key. If you would like to see your entered chars, deselect the check mark "Show asterisk".



You will be asked twice to enter your passphrase. The passphrase is case-sensitive and allows any printable character.

After entering twice your passphrase, the connection starts, if your passphrase is correct. If not, the connection fails.

### 1.3.3 Connection Scenarios

## Connection Scenarios

For communication with the target system either via V.24 or ISDN, all NovaTec PC software products use a proprietary transmission protocol called MMX. This software protocol is provided by the NovaTec network services. Thus, before any communication between a PC software module and a NovaTec target system can take place, the Network Services must be running. They have been installed together with the configuration application and can be found in the same start menu folder. Usually the Network Services will run on the same machine as the configuration application or the TraceInfo Client itself. But it is also possible to use Network Services running on a remote machine that is accessible via TCP/IP. The Network Services have to run on the system connected with the target system. Use the [Network Options dialog](#) to modify the IP address of the computer that is running the NovaTec Network services.

There are various connection scenarios

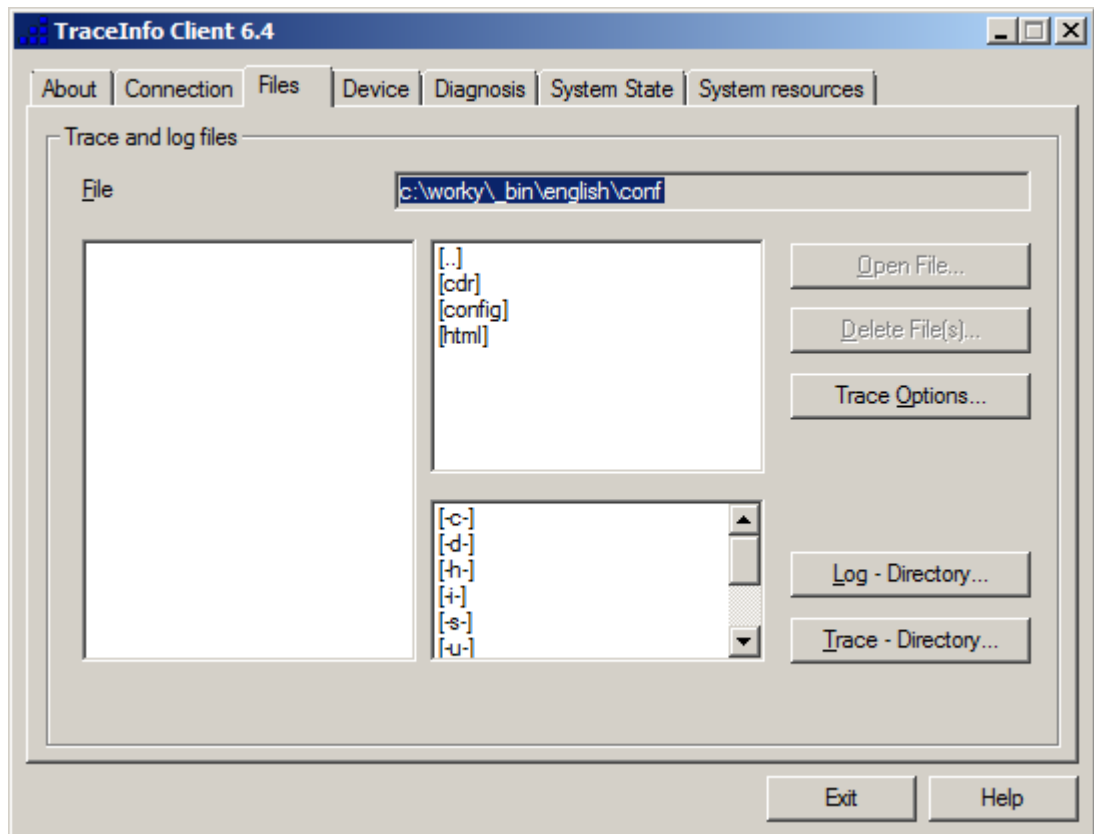
Your workstation is connected directly to the target system via The **V.24** interface **ISDN** (if the respective ISDN adapter is located on your local PC) A virtual V.24 port provided by a target-side PC coupled with your local workstation via TCP/IP. In this case the default network settings (Hostname **localhost** , port **800** ) are correct. Also the network services have to run on the local PC and must be configured to work with the correct communication port.

Another connection scenario may be that a host PC is running the Network Services, which in turn is connected directly via V.24 to the target system. In this case, the IP address of the host PC needs to be known, so that the TraceInfo Client contacts the host PC, which in turn contacts the target system. If the target system is fitted with a CCU-3, then a direct connection can be made to the target system using the TCP/IP protocol, **without** the need to run the Network Services. The IP address of the target system must be known.

## 1.4 The "Files" page

### The "Files" page

The "Files" page is used to manage [Trace and Log files](#) on the local file system and to modify the related options.



There are five main elements on the "Files" page.

At the head is **File** that displays the current selected directory in full length or the selected file. The leftmost window shows all trace and log files in the current directory that are available for selection. The upper window in the middle shows all sub directories of the current directory and a **[..]** symbol to go up one step in the directory hierarchy. Click here to navigate through the directories. If necessary you can change the drive with the list beneath. The buttons on the right supply the following functions.

#### Open File...

Select the file you wish to open and click the **Open File...** button to open it. The Button is only enabled if you have selected a Log or Trace file. The File will be converted and shown as a text file in the standard application that is set in Windows (e.g. normally Note pad).

#### Delete File...

Select the file you want to delete and click the **Delete File...** button to delete it. Once a file is deleted it is permanently deleted. It is not possible to recover a file once it has been deleted. This button is only accessible when a file has been chosen.



**Trace Options...**

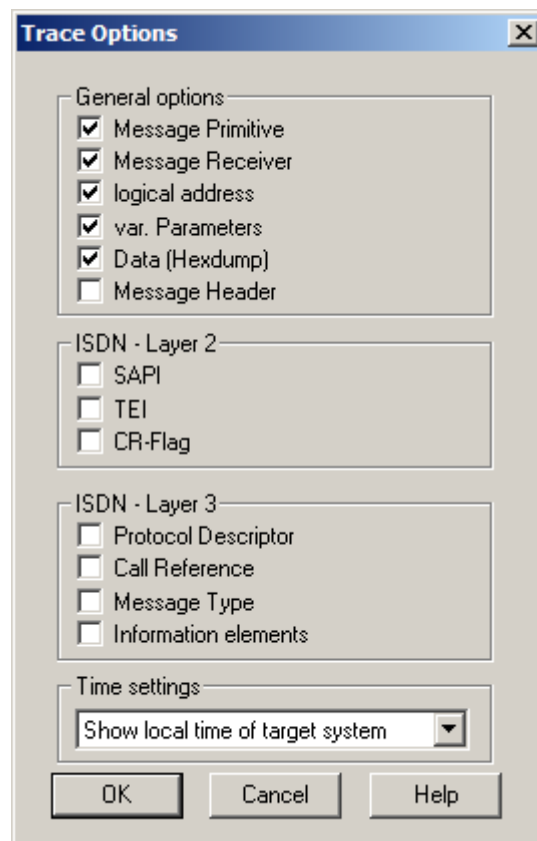
Here the various options for the trace files are set. By clicking this button the [Trace Options](#) dialog appears

**Log - directory**

Click the **Log - directory** button to select the directory where the down loaded log books should be saved. The directory you specify here is used when you are connected to the target system.

**Trace - directory**

Click the **Log - directory** button to select the directory where the down loaded traces should be saved. The directory you specify here is used when you are connected to the target system.

**Options Traces dialog**

**General options**

These attributes are evaluated every time if selected. The majority of them are translated into human readable text.

**Message Primitive**

The action intended with the message will be included in the trace

**Message Receiver**

The module to whom the message was sent to will be included in the trace

**logical address**

The hardware address (port number) will be included in the trace

**var. Parameters**

Various parameters that differ dependent on the sender/receiver of the message will be included in the trace

**Data (Hexdump)**

The data of the message will be dumped in the trace

**Message Header**

The first 4 Byte of the message will be included in the trace

**ISDN-Layer 2**

**SAPI** Enables addressing of a connection for Layer 3.

**TEI** Enables identification of the starting point and the target of a connection.

**CR - Flag** Specifies the message to be incoming or outgoing.

**ISDN-Layer 3****Protocol Descriptor**

Specifies the protocol type for the Layer 3 module

**Call Reference**

Enables the connection identifier

**Message Type**

Specifies the (Layer 3 specific) message type

**Information elements**

Enables the viewing of the various call information (e.g. the number that has been dialed, if it has been reached etc.)

### 1.4.1 About Trace and Log files

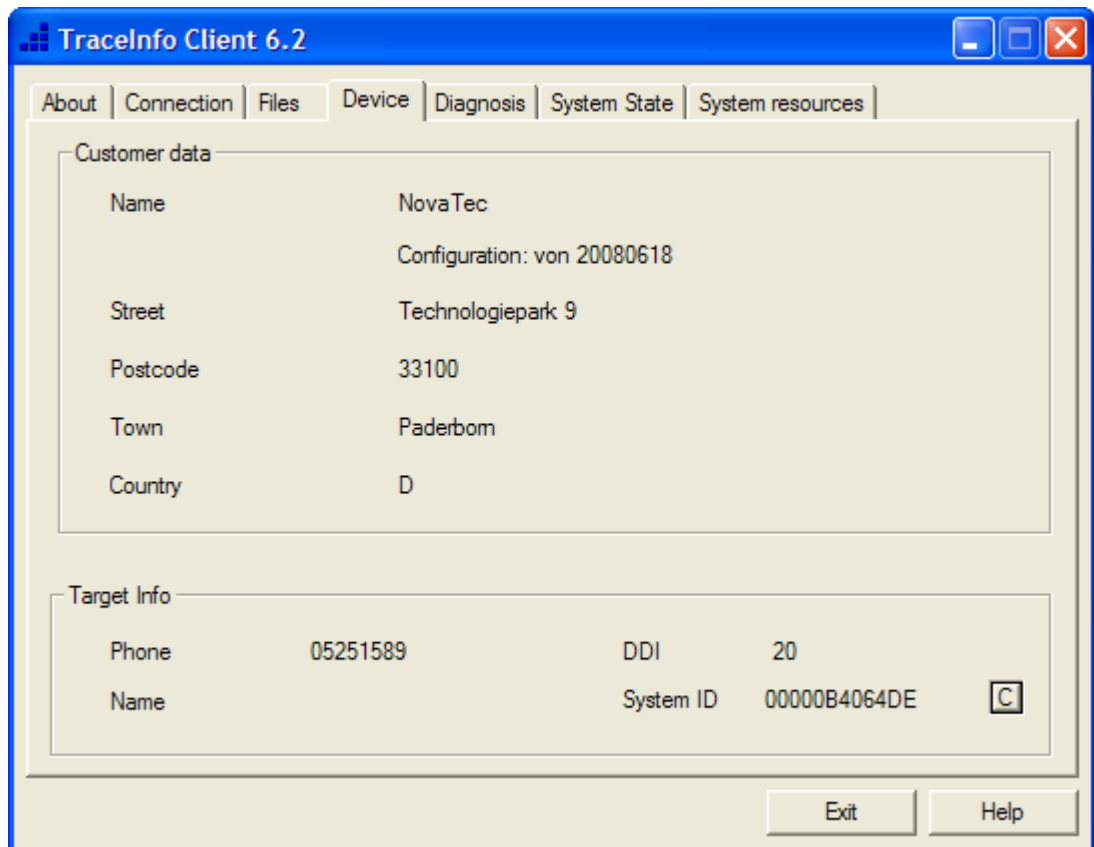
## Trace and Log files

Trace and Log book files provides information about the order of events in the target system. They consist of binary data and are stored in the target system as far as the memory limitation makes it possible. Trace files can be generated manually or by the target system itself as a reaction to specific events. Traces are normally taken from the CCU of the target system, but it is also possible to save traces of some other boards ([System Diagnosis Layer 1](#)). The log is generated continuously and contains important Events. Traces and Log books can be down loaded with the TraceInfo Client in the ["Diagnosis" page](#). The conversion into a text file for viewing can be carried out with the TraceInfo Client in the ["Files" page](#).

## 1.5 The "Device" page

### The "Device" page

On this page general device data is shown.



#### Customer data

This is the customer data that was entered during the configuration of the system. If you did not enter any customer data, then nothing will be shown.

#### Target Info

Here the target system's information is shown. Again, this information will only be shown if correctly entered during the configuration of the system. The only information that is system dependant is the System ID. The System ID is a unique number that identifies the chassis

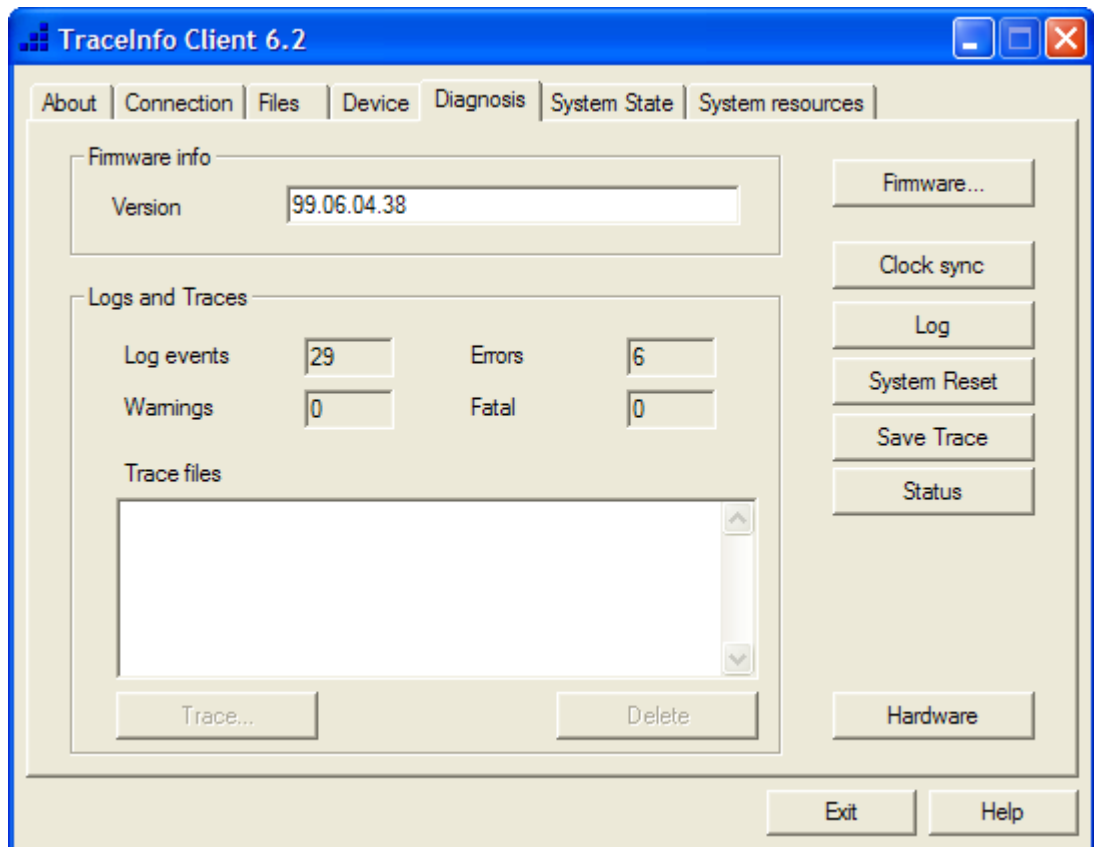
#### Note

This page is only available when connected to the target system

## 1.6 The "Diagnosis" page

### The "Diagnosis" page

On this page the various diagnostic functions are available



This page is the main point to download [traces and log books](#) from the target system. You also have the opportunity to upload new firmware to the target system, and carry out various maintenance tasks on the system.

#### Firmware

In the field **Installed** the currently installed firmware of the target system is shown. To upload a newer version of the firmware, click the **Firmware...** button and a dialog will appear, in which you may choose which firmware file (\*.rtc) is to be uploaded to the target system.

#### Clock sync

Shows the currently active and configured sources for the synchronisation. At this moment in time disabled.

## Log, Traces

In these fields information is shown about the following items

### Log-Events

The number of events present in the log file.

### Errors

The number of errors present in the log file, but which do not influence the normal running of the target system.

### Warnings

The number of warnings present in the log file, but which do not influence the normal running of the target system.

### Fatal

The number of fatal errors present in the log file, which have caused the target system to perform a reset.

### Trace files

The currently locally stored trace files. Here you can select the trace file that is to be the target file when down loading traces from the target system.

## Log

After clicking the button **Log** the log book is down loaded from the target system to the directory set using the options on the ["Files"](#) page.

## Trace...

After clicking the button **Trace...** a new trace file is created on the local PC in the directory that was set in the options on the ["Files"](#) page.

## Delete...

After selecting a file from the window **Trace files**, the selected file can be deleted using this button. Please note that any files are **permanently** deleted.

## System Reset

After clicking the System Reset button, the target system will be reset. The connection will be terminated with the target system. You must manually connect to the target system if further work is required. The system **must** be reset in order for any new firmware to become operable.

## Save Trace

After selecting the file from the **Trace files** window, and clicking the button **Save Trace**, the trace information will be down loaded from the target system into this file.

## Status

To update any settings that are shown on this page, the **Status** button should be clicked. The target system will then send any changes that will in turn be shown on this page.

## IMEI

This allows the changing of the **IMEI** numbers of the GSM modules installed on the system. At this moment in time, this feature is disabled.

## Hardware

Clicking this button, a dialog appears showing the currently installed hardware on the system, with details of each module and sub module. At this moment in time this feature is disabled.

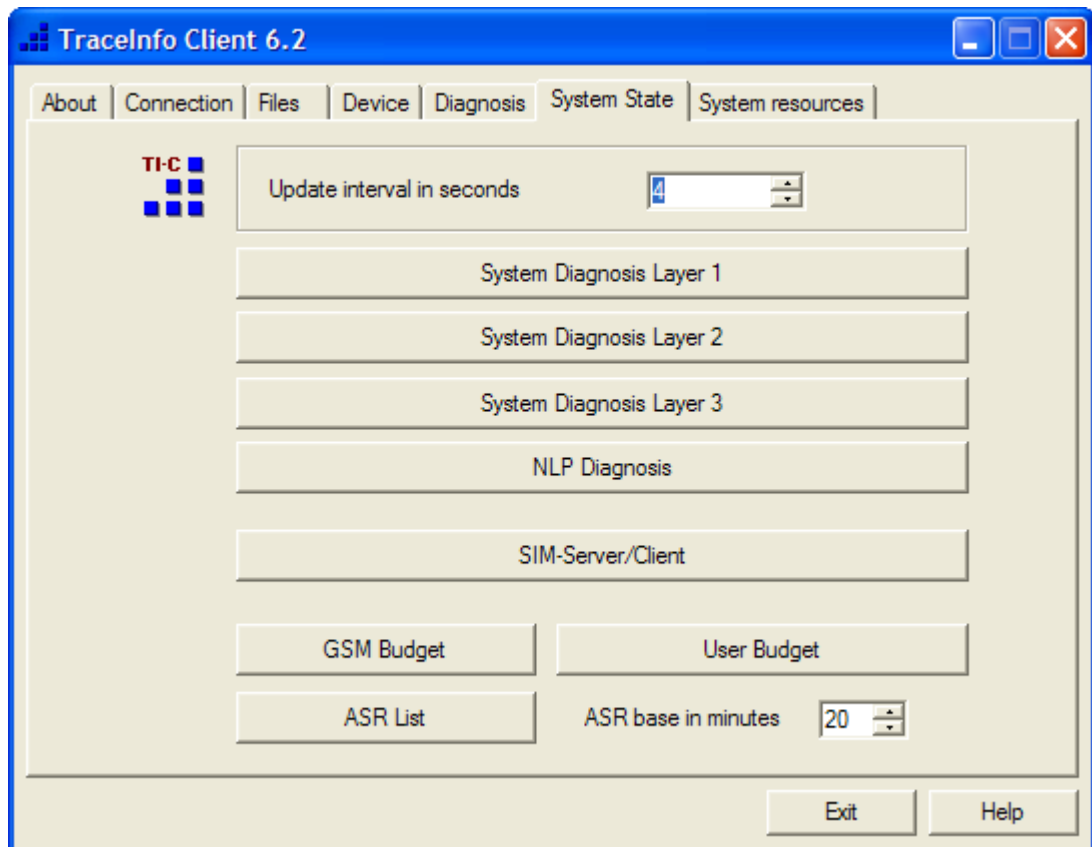
## Note

This page is only available when connected to the target system

## 1.7 The "System State" page

### The "System State" page

Using the functions on this page, the present state of the system can be shown.



#### **Update Interval (sec):**

The interval (in seconds) in which the TracInfo Client requests information from the target system. Because of the load on the target system with higher refresh cycles (lower intervals) you should not use intervals below 3 seconds.

#### **System Diagnosis Layer 1**

By clicking this button, the Layer 1 monitoring dialog is started. This shows information about the physical and low level logical connection of the interfaces.

#### **System Diagnosis Layer 2**

By clicking this button, the Layer 2 monitoring dialog is started. This gives information about the logical connection of the interfaces.

#### **System Diagnosis Layer 3**

By clicking this button, the Layer 3 monitoring dialog is started. This shows information about the calls on an interface and the various properties of the GSM , ISDN and SIP BCU channels.

**NLP Diagnosis**

By clicking this button, the NLP monitoring dialog is started. This shows information about the calls on an interface and the various properties of the BCU channels.

**SIM-Server/Client**

By clicking this button, the SIM-Server/Client dialog is started. This shows information regarding the SIM-Server/Client status(if the target system is configured as such)

**Budget List**

By clicking this button, the budget list dialog is started. This shows the current budget status of all SIMs installed on the target system.

**ASR List**

By clicking this button, the ASR list dialog is started. This shows information about the ASR of all interfaces (both fixed net and GSM).

**ASR base (min):**

For displaying the ASR history chart, this value is used as the time span that will be shown. For example, if the ASR base is set to 20 minutes, x-axis of the histogram represents 20 minutes.

**Note**

This page is only available when connected to the target system



### 1.7.1 System Diagnosis Layer 1

## System Diagnosis Layer 1

The Layer 1 system diagnosis shows various information about the physical and low level logical connections of the interfaces. Each interface is visualized with a LED, and the colour of the LED indicates the status of the interface. For each interface detailed information is available by clicking the interfaces LED with the **left** mouse button. In some cases there are various commands available when the LED is clicked with the **right** mouse button.

### LED Colours

The colours of the LED's indicate the status of the corresponding interface.

**Red** 

The interface has not been initialized

**Grey** 

The interface is inactive

**Green** 

The interface is active

**Grey with red cross** 

The interface is locked (budget is exhausted)

### Information about the selected interface

To receive textual information about an interface, select the LED by clicking on it with the **left** mouse button, and in the dialog title, the following information about the interface will be shown.

#### Slot

The position of the board within the target system

#### Name

The name of the board (CCU, EWU, WAU etc.)

#### The following information is not always available

##### Board number

The number of the installed sub-module

##### Board type

The type of sub-module installed (S04, S2M2, GSM2 etc.)

##### Active SIM

The currently active SIM card

##### Line number

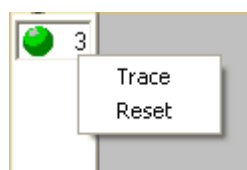
The currently active fixed net connection

##### Port ID

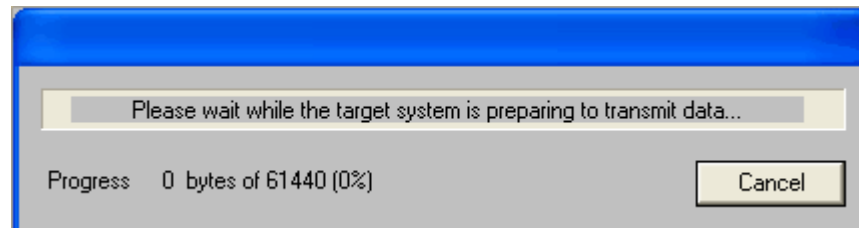
The hexadecimal port identification

### Retrieving GSM trace information

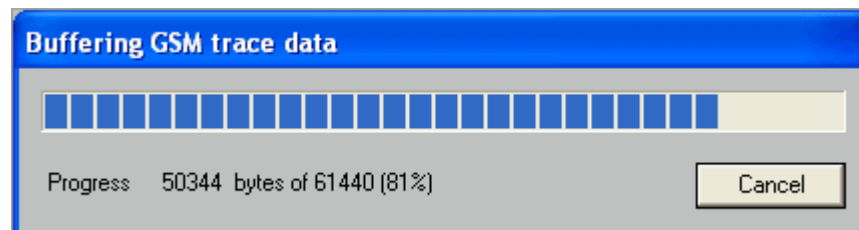
To retrieve a trace from a GSM interface, select the GSM interface and click the **right** mouse button and the following Pop-up menu will appear



On choosing the option **Trace** , the following dialog will appear



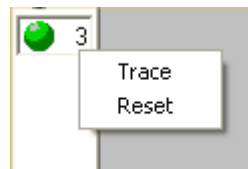
Dependent on the connection speed to the target system, this may take up to 30 seconds, then the trace information is buffered in the memory of the local machine



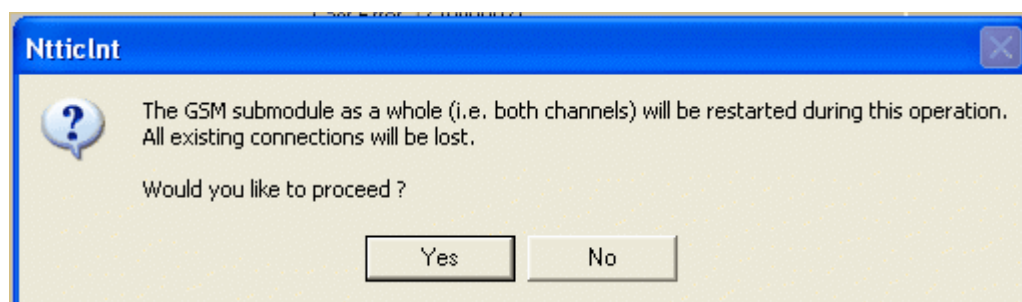
Then a dialog will appear, asking for a directory and filename for the GSM trace. It is advisable to save the GSM trace information in the same directory as the normal trace files. Once the file has been saved successfully, it can be viewed using the [Files](#) page

#### Resetting a GSM interface

Under some circumstances it may be necessary to reset a GSM interface, right click on the GSM interface to be reset and the following Pop-up menu will appear..



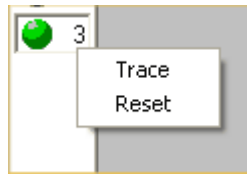
On choosing the option **Reset** , the following dialog will appear



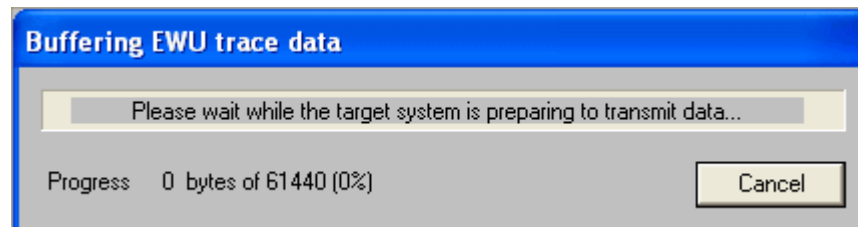
To reset the GSM interface, confirm this dialog and the interface will be reset

#### Retrieving EWU trace information

To retrieve a trace from a EWU interface, select the EWU interface and click the **right** mouse button and the following Pop-up menu will appear



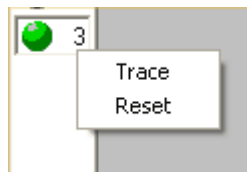
On choosing the option **Trace** , the following dialog will appear



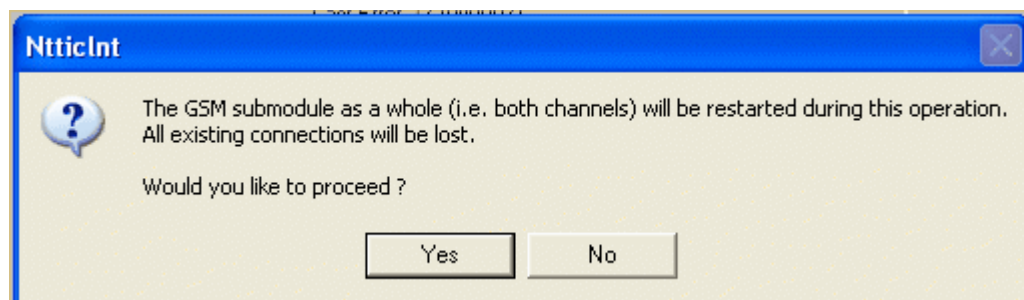
Dependent on the connection speed to the target system, this may take up to 30 seconds, then the trace information is buffered in the memory of the local machine. Then a dialog will appear, asking for a directory and filename for the EWU trace. It is advisable to save the EWU trace information in the same directory as the normal trace files. Once the file has been saved successfully, it can be viewed using the [Files](#) page

#### Resetting an EWU interface

Under some circumstances it may be necessary to reset a EWU interface, right click on the EWU interface to be reset and the following Pop-up menu will appear



On choosing the option **Reset** , the following dialog will appear



To reset the EWU interface, confirm this dialog and the interface will be reset

#### Note

All interfaces on the EWU will be reset! Dependent on what target system that is being monitored, this dialog may differ in it's appearance.

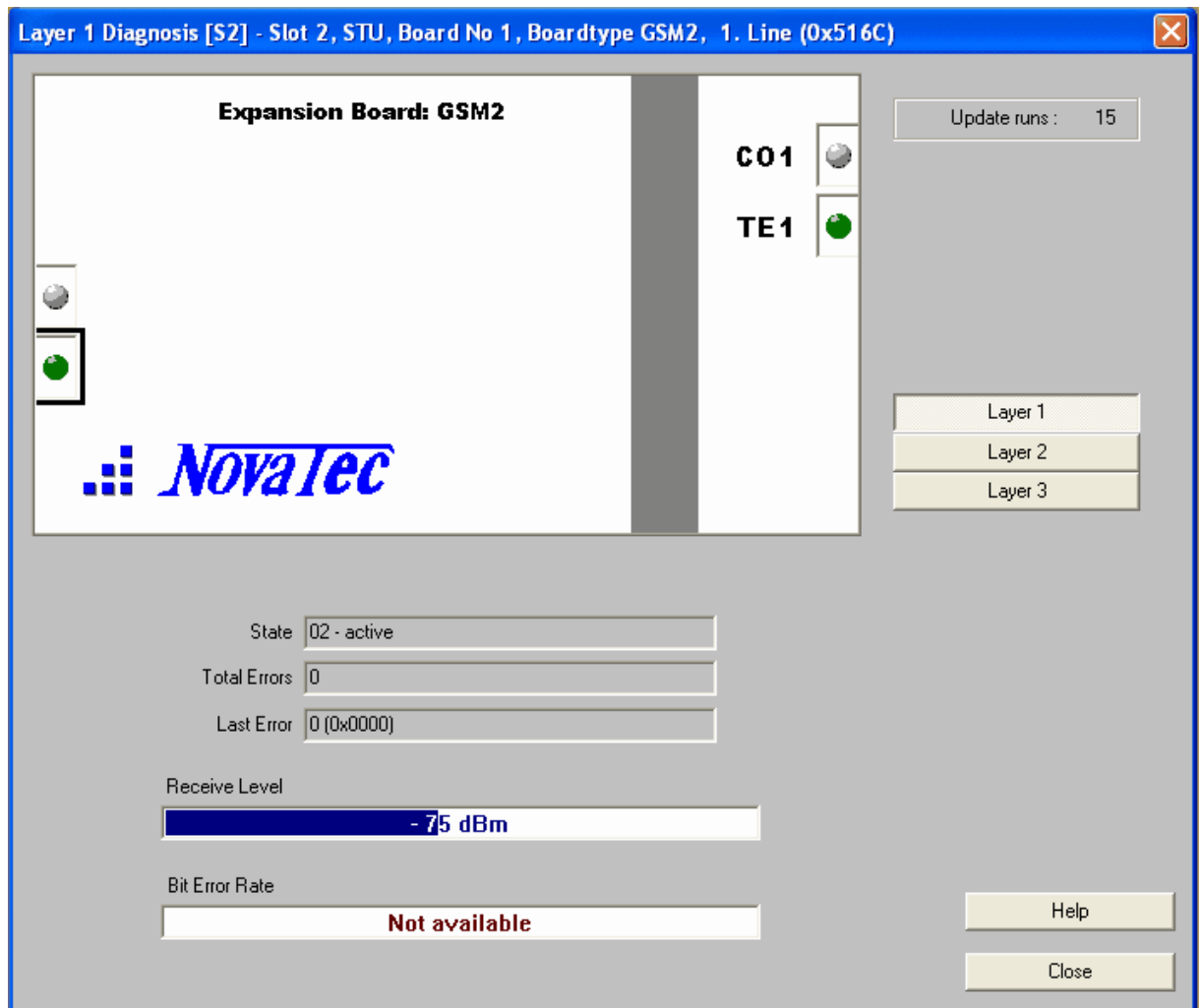
For an S2 the dialog will appear as shown [HERE](#) For the S5, S6, and S20, the dialog will appear as shown [HERE](#) For the S10 the dialog will appear as shown [HERE](#)

#### Note

This dialog is only available when connected to the target system

### S2 Layer 1 dialog

This dialog shows the layer 1 information of the S2.



#### Layer 1

Click this button to show the Layer 1 information of the target system. (inactive if the current Layer shown is Layer 1)

#### Layer 2

Click this button to show the Layer 2 information of the target system. (inactive if the current Layer shown is Layer 2)

#### Layer 3

Click this button to show the Layer 3 information of the target system. (inactive if the current Layer shown is Layer 3)

#### Update runs

The number of times that this dialog has been updated

#### State

The actual state of the selected interface. Possible values are

- 00 The interface is locked
- 01 The interface is inactive
- 02 The interface is active
- 40 The interface has a trace file, that has been created after a reset
- 80 The interface is not initialized

**Total Errors**

The total number of non fatal errors that have occurred on this interface, since the last reset

**Last Error (in Layer 1)**

The error code of the last error that occurred on the selected interface

**Receive Level**

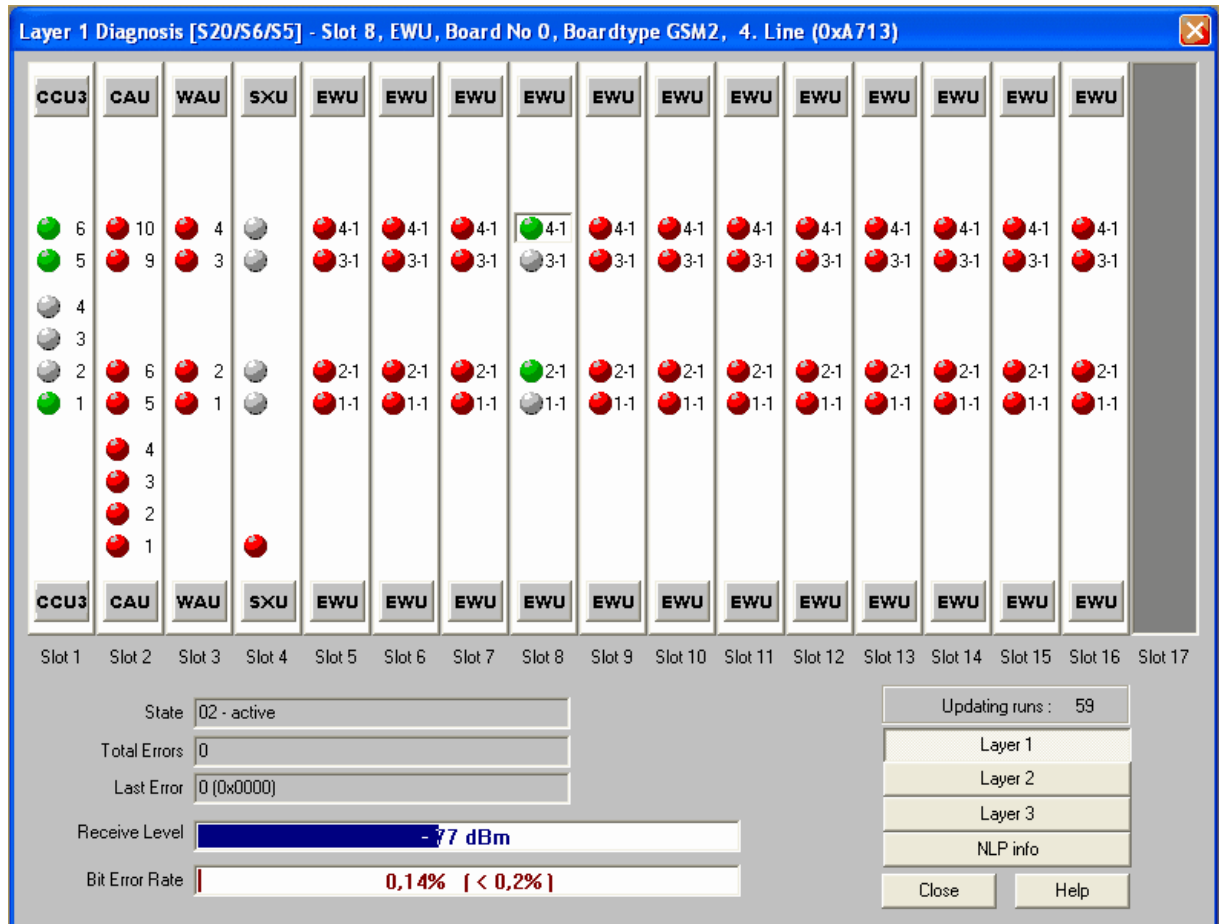
The signal strength of the currently selected interface, measured in dBm (only available with GSM interfaces)

**Bit Error Rate**

The Bit Error Rate of the currently selected interface

### S5, S6 and S20 Layer 1 dialog

This dialog shows the layer 1 information of the S20. The only differences between the S5, S6 and S20 are the number of available slots for the expansion boards.



#### Layer 1

Click this button to show the Layer 1 information of the target system (inactive if the current Layer shown is Layer 1)

#### Layer 2

Click this button to show the Layer 2 information of the target system (inactive if the current Layer shown is Layer 2)

#### Layer 3

Click this button to show the Layer 3 information of the target system (inactive if the current Layer shown is Layer 3)

#### NLP info

Click this button to show the NLP information of the target system (inactive if the current Layer shown is NLP info)

#### Updating runs

The number of times that this dialog has been updated

#### State

The actual state of the selected interface. Possible values are  
 00 The interface is locked

- 01 The interface is inactive
- 02 The interface is active
- 40 The interface has a trace file, that has been created after a reset
- 80 The interface is not initialized

**Total Errors**

The total number of non fatal errors that have occurred on this interface, since the last reset

**Last Error ( in Layer 1)**

The error code of the last error that occurred on the selected interface

**Receive Level**

The signal strength of the currently selected interface, measured in dBm (only available with GSM interfaces)

**Bit Error Rate**

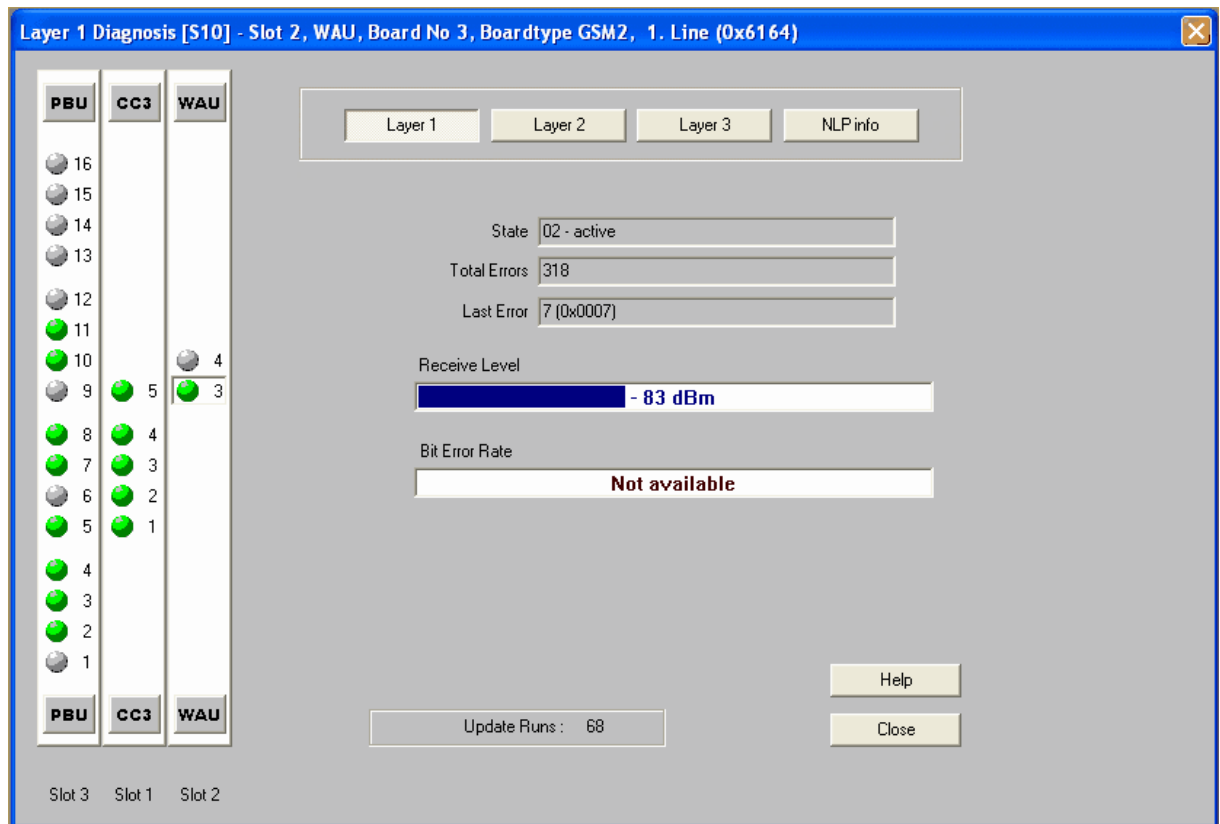
The Bit Error Rate of the currently selected interface

**Note**

In the above example a GSM interface is selected, if a S2M (PRI) or a S0 (BRI) interface is selected, then the **Receive Level** and the **Bit Error Rate** are not available.

### S10 Layer 1 dialog

This dialog shows the layer 1 information of the S10.



#### Layer 1

Click this button to show the Layer 1 information of the target system (inactive if the current Layer shown is Layer 1)

#### Layer 2

Click this button to show the Layer 2 information of the target system (inactive if the current Layer shown is Layer 2)

#### Layer 3

Click this button to show the Layer 3 information of the target system (inactive if the current Layer shown is Layer 3)

#### NLP info

Click this button to show the NLP information of the target system (inactive if the current Layer shown is NLP info)

#### Updating runs

The number of times that this dialog has been updated

#### State

The actual state of the selected interface. Possible values are

- 00 The interface is locked
- 01 The interface is inactive
- 02 The interface is active
- 40 The interface has a trace file, that has been created after a reset
- 80 The interface is not initialized

#### Total Errors



The total number of non fatal errors that have occurred on this interface, since the last reset

**Last Error (in Layer 1)**

The error code of the last error that occurred on the selected interface

**Receive Level**

The signal strength of the currently selected interface, measured in dBm (only available with GSM interfaces)

**Bit Error Rate**

The Bit Error Rate of the currently selected interface

**Note**

In the above example a GSM interface is selected, if a S2M (PRI) or a S0 (BRI) interface is selected, then the **Receive Level** and the **Bit Error Rate** are not available.

## GPS information

In the layer 1 diagnosis, on clicking a GPS port of a BCU board, the actual GPS information is shown.

<b>State</b> Date: March 14, 2006 Time: 10:01:11 Health: Doing position fixes		<input type="checkbox"/> Antenna feedline fault <input type="checkbox"/> No Battery Backup Sync.: 00003158h PII: 00000000h	<b>Satellites</b> <table border="1"> <thead> <tr> <th></th> <th>Number</th> <th>Signal level</th> <th>In use</th> </tr> </thead> <tbody> <tr><td>1</td><td>3</td><td>8.400</td><td><input checked="" type="checkbox"/></td></tr> <tr><td>2</td><td>15</td><td>2.400</td><td><input type="checkbox"/></td></tr> <tr><td>3</td><td>16</td><td>9.600</td><td><input checked="" type="checkbox"/></td></tr> <tr><td>4</td><td>18</td><td>-1.200</td><td><input type="checkbox"/></td></tr> <tr><td>5</td><td>19</td><td>13.400</td><td><input checked="" type="checkbox"/></td></tr> <tr><td>6</td><td>21</td><td>3.000</td><td><input checked="" type="checkbox"/></td></tr> <tr><td>7</td><td>22</td><td>14.200</td><td><input checked="" type="checkbox"/></td></tr> <tr><td>8</td><td>26</td><td>-1.000</td><td><input type="checkbox"/></td></tr> </tbody> </table>		Number	Signal level	In use	1	3	8.400	<input checked="" type="checkbox"/>	2	15	2.400	<input type="checkbox"/>	3	16	9.600	<input checked="" type="checkbox"/>	4	18	-1.200	<input type="checkbox"/>	5	19	13.400	<input checked="" type="checkbox"/>	6	21	3.000	<input checked="" type="checkbox"/>	7	22	14.200	<input checked="" type="checkbox"/>	8	26	-1.000	<input type="checkbox"/>
	Number	Signal level	In use																																				
1	3	8.400	<input checked="" type="checkbox"/>																																				
2	15	2.400	<input type="checkbox"/>																																				
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4	18	-1.200	<input type="checkbox"/>																																				
5	19	13.400	<input checked="" type="checkbox"/>																																				
6	21	3.000	<input checked="" type="checkbox"/>																																				
7	22	14.200	<input checked="" type="checkbox"/>																																				
8	26	-1.000	<input type="checkbox"/>																																				
<b>Position</b> Latitude: N 51° 43.586' Longitude: E 8° 45.633' Altitude: 169.130 metres (HAE)		Mode: 3D (using 5 satellites) PDOP: 2.95 HDOP: 1.34 TDOP: 1.81 VDOP: 2.63																																					

## State

### Date

The current date that the GSP module has received from the GPS satellites (UTC)

### Time

The current time that the GSP module has received from the GPS satellites (UTC)

### Health

The present status of the GSP module. This can be one of the following:

Doing position fixes

The normal status, when the GSP module has all the information required.

Don't have GPS time yet

The GPS module is waiting for the current time and date from the satellite

Need initialization

The GSP module is in the startup state

PDOP is too high

The PDOP (Dilution of Precision) is too high. The GSP positioning is too imprecise to allow an accurate result.

No usable satellites

The GPS module is not able to locate satellites to perform positioning.

Only 1 usable satellite

The GPS module can only locate one satellite. At least 4 satellites are required to calculate precise information.

Only 2 usable satellites

The GPS module can only locate two satellites. At least 4 satellites are required to calculate precise information.

Only 3 usable satellites

The GPS module can only locate three satellites. At least 4 satellites are required to calculate precise information.

The chosen satellite is unusable

The current satellite is unable to provide sufficiently precise information to be used for calculating the information required.

Unknown health status

The current status of the GPS module, is in an undefined mode.



**Antenna feedline fault**

If this option is checked, then the GPS module is probably not connected to an external antenna, or the antenna has a short circuit.

**No Battery Backup**

If this option is checked, then the GSP module has no backup information available.

**Snyc:**

Novatec specific debug information.

**Pll:**

Novatec specific debug information.

**Position****Latitude**

Latitude, gives the location of a place on Earth north or south of the Equator. Latitude is an angular measurement ranging from 0° at the Equator to 90° at the poles (90° N or 90° S).

**Longitude**

Longitude describes the location of a place on Earth east or west of a north-south line called the Prime Meridian. Longitude is given as an angular measurement ranging from 0° at the Prime Meridian to +180° eastward and -180° westward.

**Altitude**

The current altitude of the GPS module (in metres height above ellipsoid)

**Mode**

The current mode the GSP module is using (2-D or 3-D) showing how many satellites are presently in use to calculate the information shown

**PDOP**

See note below

**TDOP**

See note below

**Satellites****Number**

Each GPS satellite has an ID. This ID is shown here

**Signal level**

The current signal level of the satellite.

**Inuse**

If this option is checked, the satellite has a sufficient signal strength, so that it will be used for calculating the information shown on this dialog.

**Note**

Dilution of precision or DOP is a GPS term used in geomatics engineering to describe the geometric strength of satellite configuration. When visible satellites are close together in the sky, the geometry is said to be weak and the DOP value is high; when far apart, the geometry is strong and the DOP value is low.

Factors that affect the DOP are, besides the satellite orbits, the presence of obstructions which make it impossible to use satellites in certain sectors of the local sky. Especially in urban measurements, this may be limiting.

We speak of HDOP, VDOP, PDOP and TDOP respectively, for Horizontal, Vertical, Position (3-D) and

Time Dilution of Precision. These quantities follow mathematically from the positions of the useable satellites on the local sky. GPS receivers allow the display of these positions ("skyplot") as well as the DOP values.

## 1.7.2 System Diagnosis Layer 2

### System Diagnosis Layer 2

The Layer 2 system diagnosis gives information about the logical connection of the interfaces. Each interface is visualized with a LED, and the colour of the LED indicates the status of the interface. For each interface detailed information is available by clicking the interfaces LED with the **left** mouse button. In some cases there are various commands available when the LED is clicked with the **right** mouse button.

#### LED Colours

The colours of the LED's indicate the status of the corresponding interface.

**Red** 

The interface has not been initialized

**Grey** 

The interface is inactive

**Green** 

The interface is active

**Grey with red cross** 

The interface is locked (budget is exhausted)

#### Information about the selected interface

The receive textual information about an interface, select the LED by clicking on it with the **left** mouse button, and in the dialog title, the following information about the interface will be shown.

##### Slot

The position of the board within the target system

##### Name

The name of the board (CCU, EWU, WAU etc.)

#### The following information is not always available

##### Board number

The number of the installed sub-module

##### Board type

The type of sub-module installed (S04, S2M2, GSM2 etc.)

##### Active SIM

The currently active SIM card

##### Line number

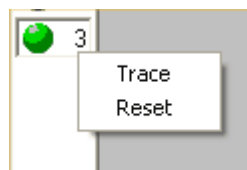
The currently active fixed net connection

##### Port ID

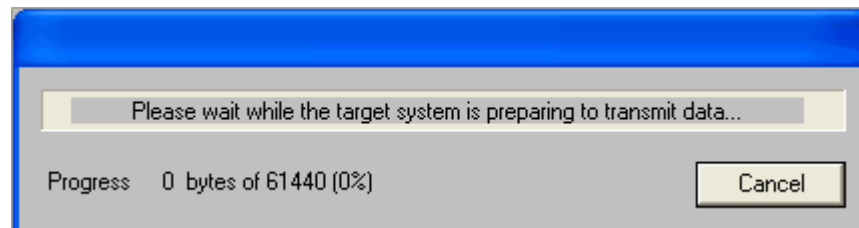
The hexadecimal port identification

#### Retrieving GSM trace information

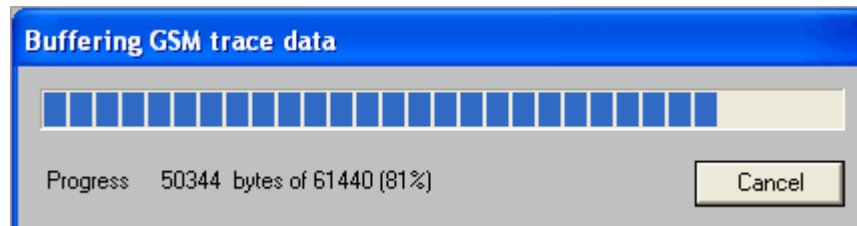
To retrieve a trace from a GSM interface, select the GSM interface and click the **right** mouse button and the following Pop-up menu will appear



On choosing the option **Trace**, the following dialog will appear



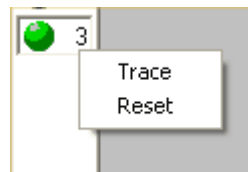
Dependent on the connection speed to the target system, this may take up to 30 seconds, then the trace information is buffered in the memory of the local machine



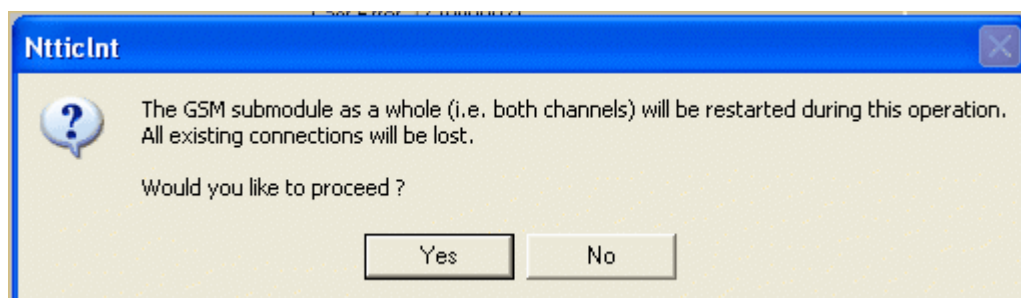
Then a dialog will appear, asking for a directory and filename for the GSM trace. It is advisable to save the GSM trace information in the same directory as the normal trace files. Once the file has been saved successfully, it can be viewed using the [Files](#) page

### Resetting a GSM interface

Under some circumstances it may be necessary to reset a GSM interface, right click on the GSM interface to be reset and the following Pop-up menu will appear



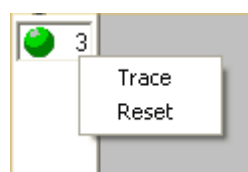
On choosing the option **Reset**, the following dialog will appear



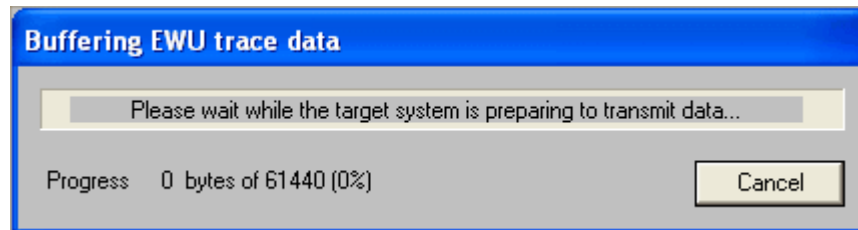
To reset the GSM interface, confirm this dialog and the interface will be reset

### Retrieving EWU trace information

To retrieve a trace from a EWU interface, select the EWU interface and click the **right** mouse button and the following Pop-up menu will appear



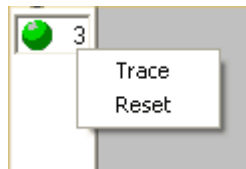
On choosing the option **Trace** , the following dialog will appear



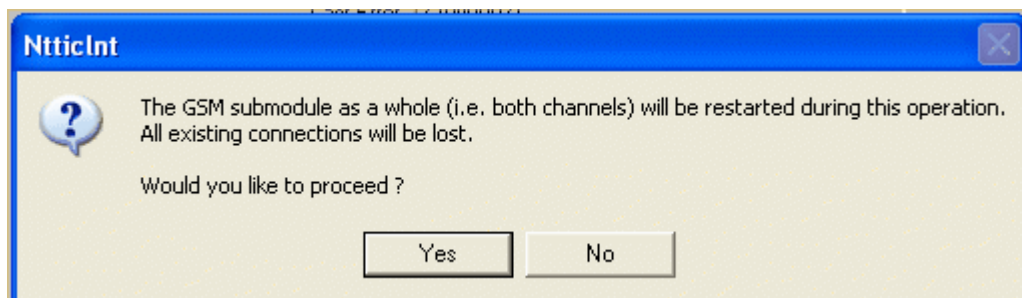
Dependent on the connection speed to the target system, this may take up to 30 seconds, then the trace information is buffered in the memory of the local machine. Then a dialog will appear, asking for a directory and filename for the EWU trace. It is advisable to save the EWU trace information in the same directory as the normal trace files. Once the file has been saved successfully, it can be viewed using the [Files](#) page

### Resetting an EWU interface

Under some circumstances it may be necessary to reset a EWU interface, right click on the EWU interface to be reset and the following Pop-up menu will appear



On choosing the option **Reset** , the following dialog will appear



To reset the EWU interface, confirm this dialog and the interface will be reset

### Note

All interfaces on the EWU will be reset! Dependent on what target system that is being monitored, this dialog may differ in its appearance. For an S2 the dialog will appear as shown [HERE](#) For the S5, S6, and S20, the dialog will appear as shown [HERE](#) For the S10 the dialog will appear as shown [HERE](#)

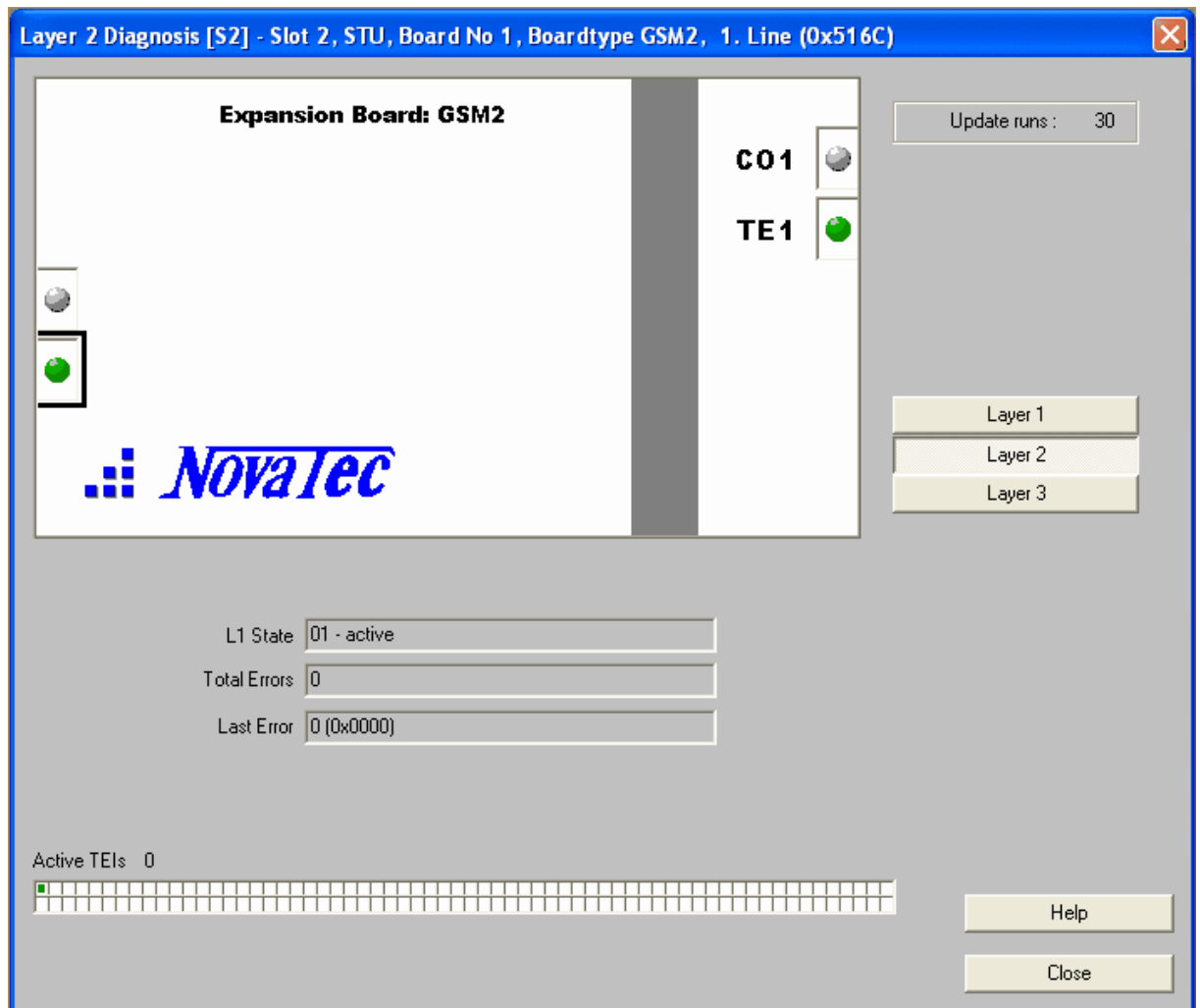
### Note

This dialog is only available when connected to the target system



### S2 Layer 2 dialog

This dialog shows the layer 2 information of the S2.



#### Layer 1

Click this button to show the Layer 1 information of the target system (inactive if the current Layer shown is Layer 1)

#### Layer 2

Click this button to show the Layer 2 information of the target system (inactive if the current Layer shown is Layer 2)

#### Layer 3

Click this button to show the Layer 3 information of the target system (inactive if the current Layer shown is Layer 3)

#### Update runs

The number of times that this dialog has been actualised

#### L1 State

The actual state of the selected interface. Possible values are

- 00 The interface is locked
- 01 The interface is inactive
- 02 The interface is active
- 40 The interface has a trace file, that has been created after a reset
- 80 The interface is not initialized

**Total Errors**

The total number of non fatal errors that have occurred on this interface, since that last reset

**Last Error (in Layer 2)**

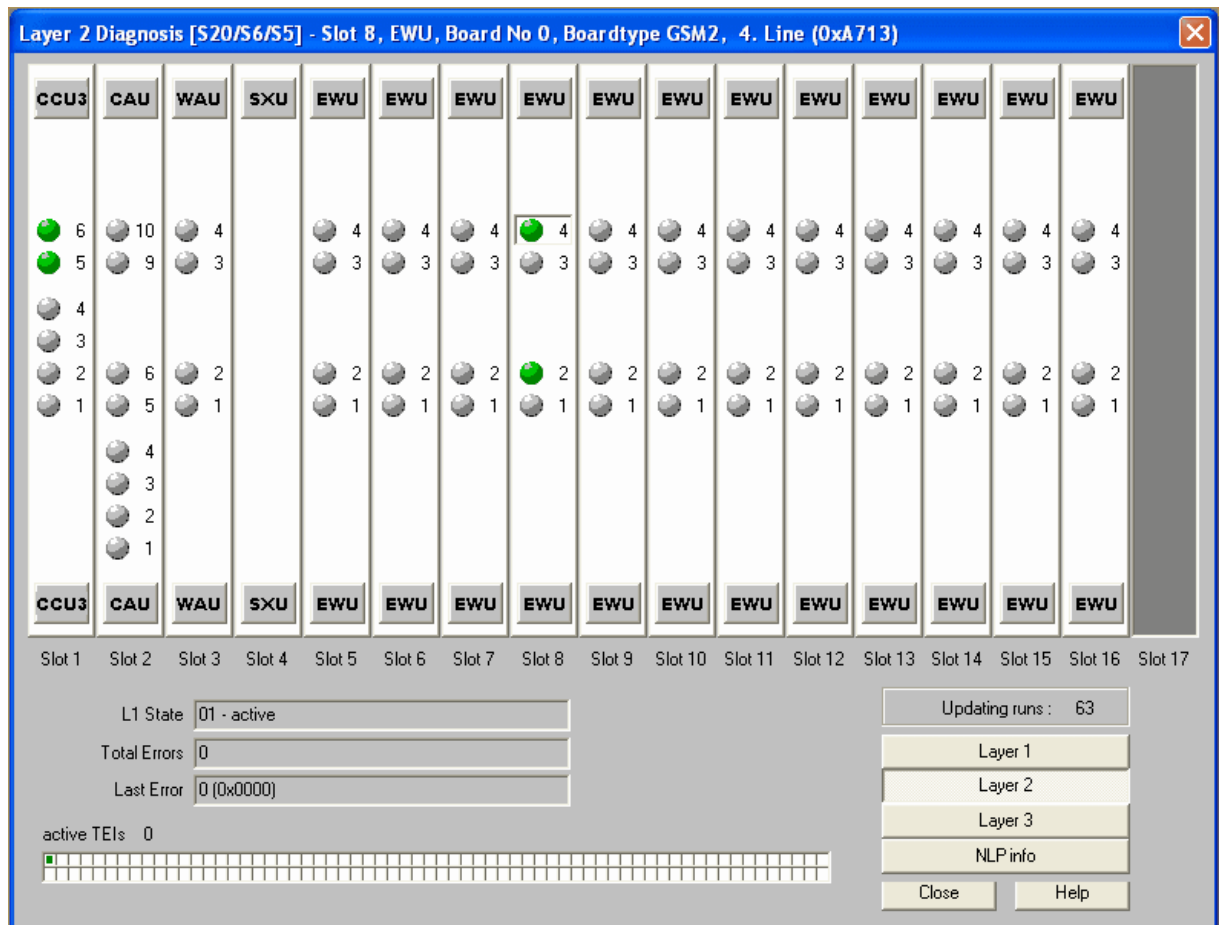
The error code of the last error that occurred on the selected interface

**Active TEI's**

The number of currently active TEI's

### S5, S6 and S20 Layer 2 dialog

This dialog shows the layer 1 information of the S20. The only differences between the S5, S6 and S20 are the number of available slots for the expansion boards.



#### Layer 1

Click this button to show the Layer 1 information of the target system (inactive if the current Layer shown is Layer 1)

#### Layer 2

Click this button to show the Layer 2 information of the target system (inactive if the current Layer shown is Layer 2)

#### Layer 3

Click this button to show the Layer 3 information of the target system (inactive if the current Layer shown is Layer 3)

#### NLP info

Click this button to show the NLP information of the target system (inactive if the current Layer shown is NLP)

#### Updating runs

The number of times that this dialog has been actualised

#### L1 State

The actual state of the selected interface. Possible values are  
00 The interface is locked

01 The interface is inactive  
02 The interface is active  
40 The interface has a trace file, that has been created after a reset  
80 The interface is not initialized

**Total Errors**

The total number of non fatal errors that have occurred on this interface, since that last reset

**Last Error (in Layer 2)**

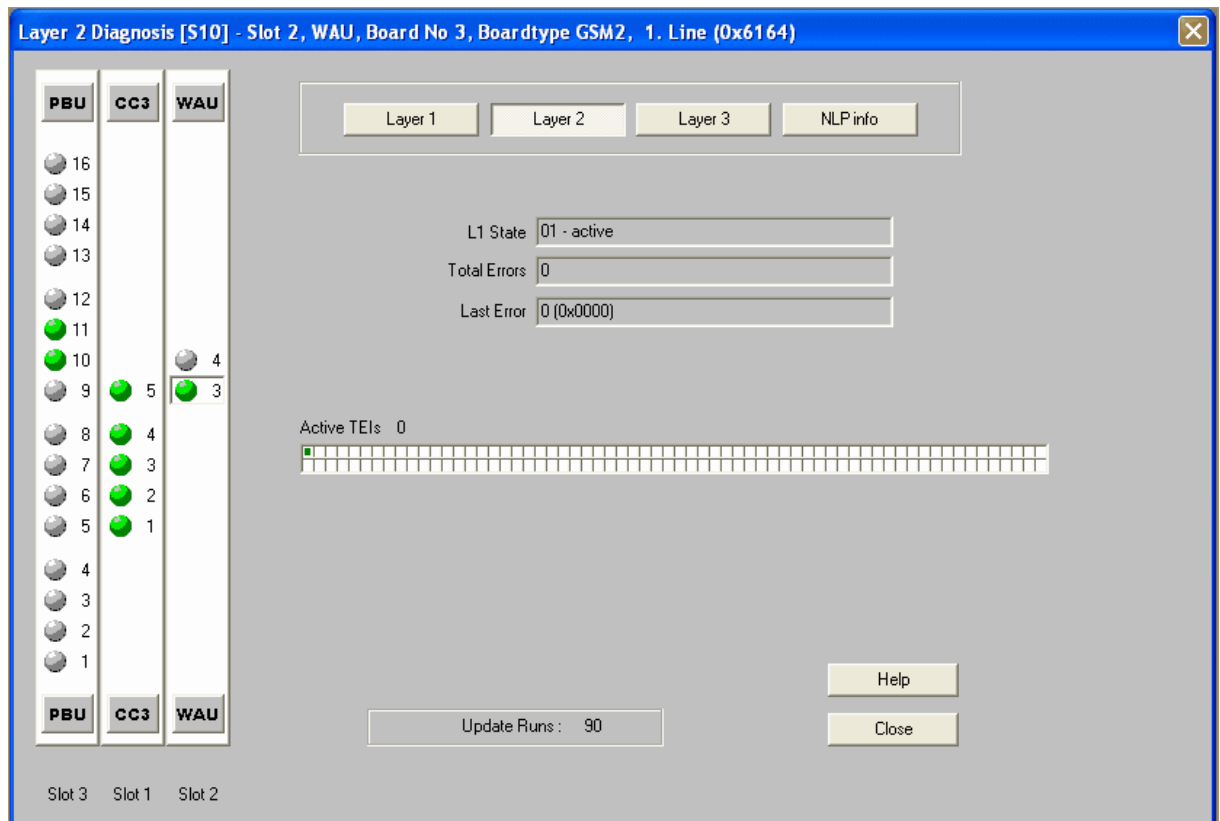
The error code of the last error that occurred on the selected interface

**Active TEI's**

The number of currently active TEI's

### S10 Layer 2 dialog

This dialog shows the layer 2 information of the S10.



#### Layer 1

Click this button to show the Layer 1 information of the target system (inactive if the current Layer shown is Layer 1)

#### Layer 2

Click this button to show the Layer 2 information of the target system (inactive if the current Layer shown is Layer 2)

#### Layer 3

Click this button to show the Layer 3 information of the target system (inactive if the current Layer shown is Layer 3)

#### NLP info

Click this button to show the NLP information of the target system (inactive if the current Layer shown is NLP)

#### Updating runs

The number of times that this dialog has been actualised

#### L1 State

The actual state of the selected interface. Possible values are

- 00 The interface is locked
- 01 The interface is inactive
- 02 The interface is active
- 40 The interface has a trace file, that has been created after a reset
- 80 The interface is not initialized

#### Total Errors

The total number of non fatal errors that have occurred on this interface, since that last reset

**Last Error (in Layer 2)**

The error code of the last error that occurred on the selected interface

**Active TEI's**

The number of currently active TEI's

### 1.7.3 System Diagnosis Layer 3

## System Diagnosis Layer 3

The Layer 3 system diagnosis shows various information about the calls on an interface. Each interface is visualized with a LED, and the colour of the LED indicates the status of the interface. For each interface detailed information is available by clicking the interfaces LED with the **left** mouse button. In some cases there are various commands available when the LED is clicked with the **right** mouse button.

#### LED Colours

The colours of the LED's indicate the status of the corresponding interface.

**Red** 

The interface has not been initialized

**Grey** 

The interface is inactive

**Green** 

The interface is active

**Grey with red cross** 

The interface is locked (budget is exhausted)

#### Information about the selected interface

To receive textual information about an interface, select the LED by clicking on it with the **left** mouse button, and in the dialog title, the following information about the interface will be shown.

##### Slot

The position of the board within the target system

##### Name

The name of the board (CCU, EWU, WAU etc.)

#### The following information is not always available

##### Board number

The number of the installed sub-module

##### Board type

The type of sub-module installed (S04, S2M2, GSM2 etc.)

##### Active SIM

The currently active SIM card

##### Line number

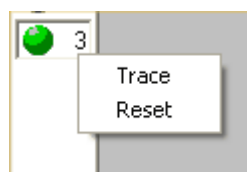
The currently active fixed net connection

##### Port ID

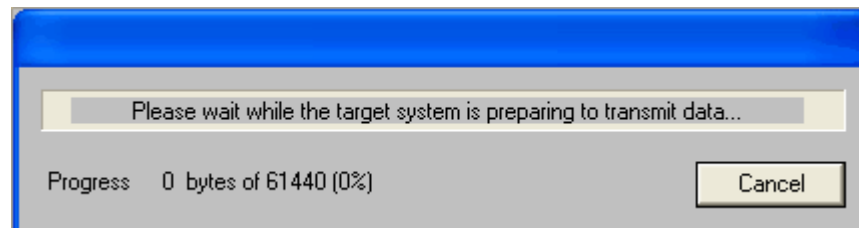
The hexadecimal port identification

#### Retrieving GSM trace information

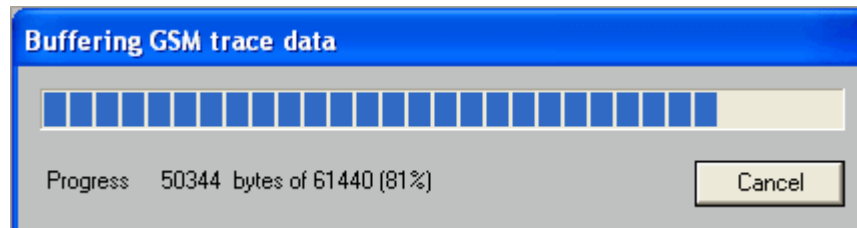
To retrieve a trace from a GSM interface, select the GSM interface and click the **right** mouse button and the following Pop-up menu will appear



On choosing the option **Trace**, the following dialog will appear



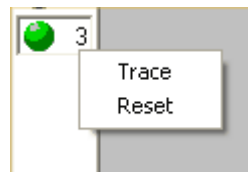
Dependent on the connection speed to the target system, this may take up to 30 seconds, then the trace information is buffered in the memory of the local machine



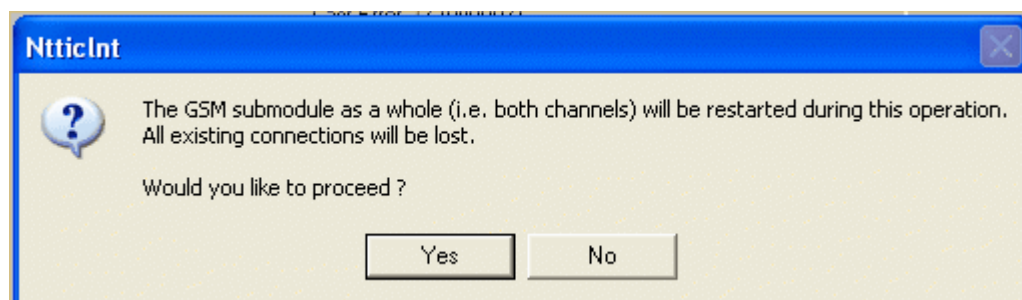
Then a dialog will appear, asking for a directory and filename for the GSM trace. It is advisable to save the GSM trace information in the same directory as the normal trace files. Once the file has been saved successfully, it can be viewed using the [Files](#) page

### Resetting a GSM interface

Under some circumstances it may be necessary to reset a GSM interface, right click on the GSM interface to be reset and the following Pop-up menu will appear



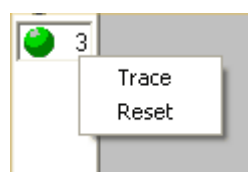
On choosing the option **Reset**, the following dialog will appear



To reset the GSM interface, confirm this dialog and the interface will be reset

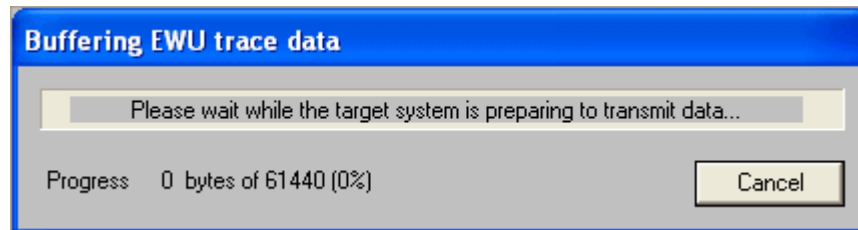
### Retrieving EWU trace information

To retrieve a trace from a EWU interface, select the EWU interface and click the **right** mouse button and the following Pop-up menu will appear





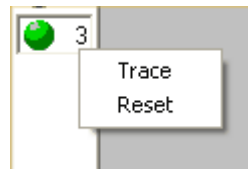
On choosing the option **Trace** , the following dialog will appear



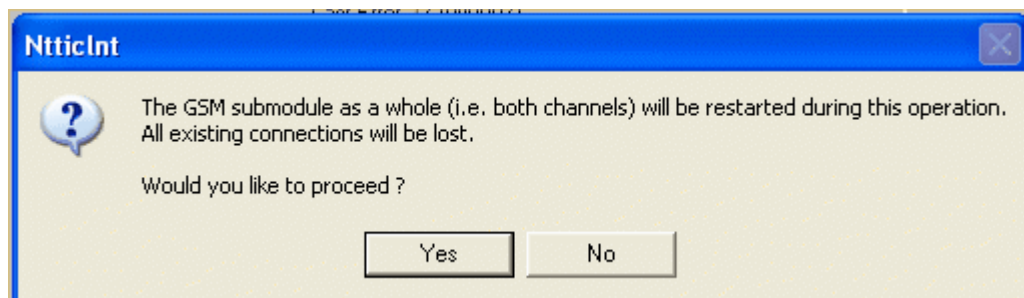
Dependent on the connection speed to the target system, this may take up to 30 seconds, then the trace information is buffered in the memory of the local machine. Then a dialog will appear, asking for a directory and filename for the EWU trace. It is advisable to save the EWU trace information in the same directory as the normal trace files. Once the file has been saved successfully, it can be viewed using the [Files](#) page

### Resetting an EWU interface

Under some circumstances it may be necessary to reset a EWU interface, right click on the EWU interface to be reset and the following Pop-up menu will appear



On choosing the option **Reset** , the following dialog will appear



To reset the EWU interface, confirm this dialog and the interface will be reset

### Note

All interfaces on the EWU will be reset! Dependent on what target system that is being monitored, this dialog may differ in its appearance. For an S2 the dialog will appear as shown [HERE](#) For the S5, S6, and S20, the dialog will appear as shown [HERE](#) For the S10 the dialog will appear as shown [HERE](#)

**Note** This dialog is only available when connected to the target system

### S2 Layer 3 dialog

This dialog shows the layer 3 information of the S2.

**Layer 3 Diagnosis [S2] - Slot 2, STU, Board No 1, Boardtype GSM2, 1. Line (0x516C)**

**Expansion Board: GSM2**

**C01**

**TE1**

Update runs : 26

Layer 1  
Layer 2  
Layer 3

IMSI: 262029813516336; IMEI: 351249003081435

Home-Provider: No description ICC-ID: 89492098302500816265

PIN: 000000000

Current Carrier: Vodafone D2; LAC: 0033; CI: 30CC Call attempts: 0

State: 0000 - inactive Dial: 0

RC GSM: 0 (No description) / 0 (No description) Alert: 0

RC ISDN: 0 (No description) / 0 (No description) Connect: 0

GSM-Module: SIEMENS; TC35i; REVISION 01.05 Call duration: 0

Help  
Close

#### Layer 1

Click this button to show the Layer 1 information of the target system (inactive if the current Layer shown is Layer 1)

#### Layer 2

Click this button to show the Layer 2 information of the target system (inactive if the current Layer shown is Layer 2)

#### Layer 3

Click this button to show the Layer 3 information of the target system (inactive if the current Layer shown is Layer 3)

#### Update runs

The number of times that this dialog has been actualised

**The following information is only available when a GSM interface is selected**

#### IMSI

The **IMSI** of the SIM card that is being used by the selected GSM interface

#### IMEI

The **IMEI** of the currently selected GSM interface

**Home Provider**

A textual description of the provider currently being used by the active SIM card on the selected GSM interface

**ICC-ID**

The **ICC-ID** of the SIM card that is currently active in the selected GSM interface

**PIN**

The **PIN** of the SIM card that is currently active in the selected GSM interface

**Current Carrier**

The name of the current carrier in which the currently active SIM card is logged into. Also the LAC and CI are shown.

**RC GSM**

The release cause of a GSM connection

**RC ISDN**

The release cause of a ISDN connection

**GSM - Module**

Hardware information of the currently selected GSM interface. Manufacturer, type and firmware version

**Call attempts**

The total number of calls this interface has attempted

**Dial**

The total number of call attempts, that were disconnected during the dialling phase

**Alert**

The total number of call attempts, that were disconnected during the alert phase

**Connect**

The total number of call attempts, that were successfully connected

**Duration**

The total time of the successful connections of this interface

### S5, S6 and S20 Layer 3 dialog

This dialog shows the layer 1 information of the S20. The only differences between the S5, S6 and S20 are the number of available slots for the expansion boards.

**Layer 3 Diagnosis [S20/S6/S5] - Slot 8, EWU, Board No 0, Boardtype GSM2, 4. Line (0xA713)**

CCU3	CAU	WAU	SXU	EWU	EWU	EWU	EWU	EWU	EWU	EWU	EWU	EWU	EWU	EWU	EWU
6	10	4		4	4	4	4	4	4	4	4	4	4	4	4
5	9	3		3	3	3	3	3	3	3	3	3	3	3	3
4															
3															
2	6	2		2	2	2	2	2	2	2	2	2	2	2	2
1	5	1		1	1	1	1	1	1	1	1	1	1	1	1
	4														
	3														
	2														
	1														
CCU3	CAU	WAU	SXU	EWU	EWU	EWU	EWU	EWU	EWU	EWU	EWU	EWU	EWU	EWU	EWU

Slot 1 Slot 2 Slot 3 Slot 4 Slot 5 Slot 6 Slot 7 Slot 8 Slot 9 Slot 10 Slot 11 Slot 12 Slot 13 Slot 14 Slot 15 Slot 16 Slot 17

ICC-ID: 89492057298170421205 IMSI: 262025700049673; IMEI: 351249002771549 Updating runs: 68

State: 0000 - inactive PIN: 000000000

Home-Provider: No description RC GSM: 0 (No description) / 0 (No description)

Current Carrier: Vodafone D2; LAC: 3300; CI: CC30 RC ISDN: 0 (No description) / 0 (No description)

GSM - Module: SIEMENS; TC35i; REVISION 01.05

Call attempts: 0 Dial: 0 Alert: 0 Connect: 0 Duration: 0

Layer 1  
Layer 2  
Layer 3  
NLP info  
Close Help

#### Layer 1

Click this button to show the Layer 1 information of the target system (inactive if the current Layer shown is Layer 1)

#### Layer 2

Click this button to show the Layer 2 information of the target system (inactive if the current Layer shown is Layer 2)

#### Layer 3

Click this button to show the Layer 3 information of the target system (inactive if the current Layer shown is Layer 3)

#### NLP info

Click this button to show the NLP information of the target system (inactive if the current Layer shown is NLP info)

#### Updating runs

The number of times that this dialog has been actualised

**The following information is only available when a GSM interface is selected**

**IMSI**

The **IMSI** of the SIM card that is being used by the selected GSM interface

**IMEI**

The **IMEI** of the currently selected GSM interface

**Home Provider**

A textual description of the provider currently being used by the active SIM card on the selected GSM interface

**ICC-ID**

The **ICC-ID** of the SIM card that is currently active in the selected GSM interface

**PIN**

The **PIN** of the SIM card that is currently active in the selected GSM interface

**Current Carrier**

The name of the current carrier in which the currently active SIM card is logged into. Also the LAC and CI are shown.

**RC GSM**

The release cause of a GSM connection

**RC ISDN**

The release cause of a ISDN connection

**GSM - Module**

Hardware information of the currently selected GSM interface. Manufacturer, type and firmware version

**Call attempts**

The total number of calls this interface has attempted

**Dial**

The total number of call attempts, that were disconnected during the dialling phase

**Alert**

The total number of call attempts, that were disconnected during the alert phase

**Connect**

The total number of call attempts, that were successfully connected

**Duration**

The total time of the successful connections of this interface

### S10 Layer 3 dialog

This dialog shows the layer 3 information of the S10 when a GSM interface is selected.

#### Layer 1

Click this button to show the Layer 1 information of the target system (inactive if the current Layer shown is Layer 1)

#### Layer 2

Click this button to show the Layer 2 information of the target system (inactive if the current Layer shown is Layer 2)

#### Layer 3

Click this button to show the Layer 3 information of the target system (inactive if the current Layer shown is Layer 3)

#### NLP info

Click this button to show the NLP information of the target system (inactive if the current Layer shown is NLP info)

#### Update runs

The number of times that this dialog has been actualised

**The following information is only available when a GSM interface is selected**

#### IMSI

The **IMSI** of the SIM card that is being used by the selected GSM interface

#### IMEI

The **IMEI** of the currently selected GSM interface

#### Home Provider

A textual description of the provider currently being used by the active SIM card on the

selected GSM interface

**ICC-ID**

The **ICC-ID** of the SIM card that is currently active in the selected GSM interface

**PIN**

The **PIN** of the SIM card that is currently active in the selected GSM interface

**Current Carrier**

The name of the current carrier in which the currently active SIM card is logged into. Also the LAC and CI are shown.

**RC GSM**

The release cause of a GSM connection

**RC ISDN**

The release cause of a ISDN connection

**GSM - Module**

Hardware information of the currently selected GSM interface. Manufacturer, type and firmware version

**Call attempts**

The total number of calls this interface has attempted

**Dial**

The total number of call attempts, that were disconnected during the dialling phase

**Alert**

The total number of call attempts, that were disconnected during the alert phase

**Connect**

The total number of call attempts, that were successfully connected

**Call duration**

The total time of the successful connections of this interface

## 1.7.4 System Diagnosis NLP

### System Diagnosis NLP

The NLP system diagnosis shows various information about the calls on an interface. Each interface is visualized with a LED, and the colour of the LED indicates the status of the interface. For each interface detailed information is available by clicking the interfaces LED with the **left** mouse button. In some cases there are various commands available when the LED is clicked with the **right** mouse button.

#### LED Colours

The colours of the LED's indicate the status of the corresponding interface.

**Red** 

The interface has not been initialized

**Grey** 

The interface is inactive

**Green** 

The interface is active

**Grey with red cross** 

The interface is locked (budget is exhausted, or incorrectly configured)

#### Information about the selected interface

To receive textual information about an interface, select the LED by clicking on it with the **left** mouse button, and in the dialog title, the following information about the interface will be shown.

##### Slot

The position of the board within the target system

##### Name

The name of the board (CCU, EWU, WAU etc.)

#### The following information is not always available

##### Board number

The number of the installed sub-module

##### Board type

The type of sub-module installed (S04, S2M2, GSM2 etc.)

##### Line number

The currently active fixed net connection

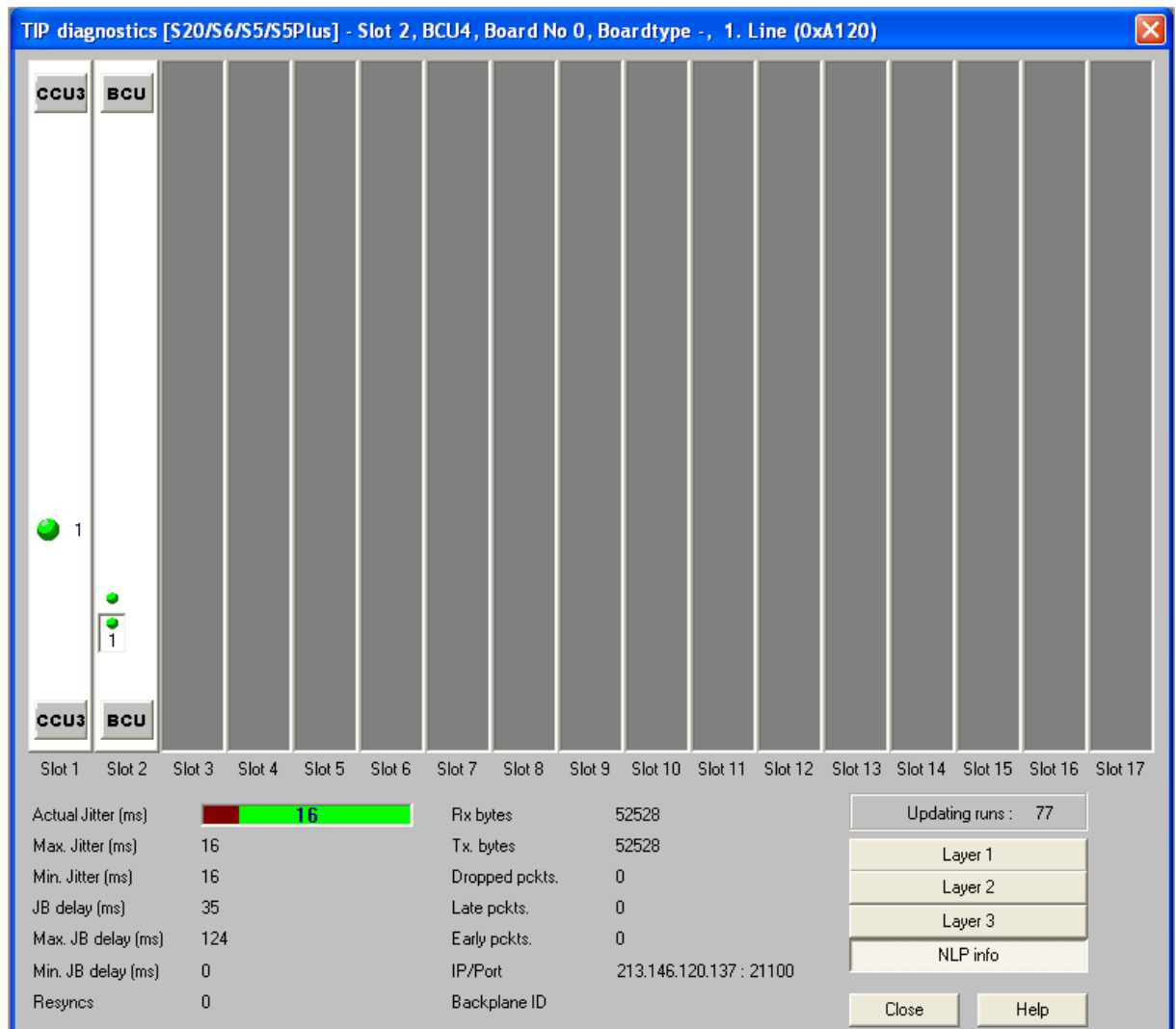
##### Port ID

The hexadecimal port identification



**S5, S6 and S20 NLP dialog**

This dialog shows the NLP information of the S20. The only differences between the S5, S6 and S20 are the number of available slots for the expansion boards.



**Layer 1**

Click this button to show the Layer 1 information of the target system (inactive if the current Layer shown is Layer 1)

**Layer 2**

Click this button to show the Layer 2 information of the target system (inactive if the current Layer shown is Layer 2)

**Layer 3**

Click this button to show the Layer 3 information of the target system (inactive if the current Layer shown is Layer 3)

**Updating runs**

The number of times that this dialog has been actualised

**The information below is written into the CDR information every 30 minutes, and then the statistics are reset.**

**Actual Jitter (ms)**

Shows the current state of the jitter buffer. The number represents the size (in milli seconds) of the buffer that is currently in use, the red area shows the amount graphically that is in use in comparison to the total jitter buffer available. (since the last statistic reset)

**Max. Jitter (ms)**

The maximal recorded amount of the jitter buffer that has been used (in milli seconds) since the last statistic reset

**Min. Jitter (ms)**

The minimal recorded amount of the jitter buffer that has been used (in milli seconds) since the last statistic reset

**JB delay (ms)**

This represents the POD (Packet Play Out Delay) of the last received packet

**Max. JB delay (ms)**

Maximum packet play out delay in milli seconds since the beginning of the connection or since the last statistic reset

**Min. JB delay (ms)**

Minimum packet play out delay in milli seconds since the beginning of the connection or since the last statistic reset

**Resyncs**

The number of resynchronization that have been carried out since the last statistic reset between the two NMG connected via NLP

**RX bytes**

The total number of bytes received since the last statistic reset

**TX bytes**

The total number of bytes transmitted since the last statistic reset

**Dropped pkts.**

The the sum of early, late, invalid and duplicate packets (since the last statistic reset). If the number is dropped packets is very large, this is an indication of a very poor IP connection

**Early pkts.**

The number of early packets (since the last statistic reset). Early packets are packets which cannot be stored in the jitter buffer because the packet requires a too high play out delay. Early packets are discarded, and are an indication of poor IP quality

**Late pckts.**

The number of late packets (since the last reset). Late packets are packets which have been received after the estimated play out time for that packet was over. Late packets are discarded, and are an indication of poor IP quality

**Note**

A large difference between the two above values could be an indication that the two NMG systems are using different codecs for voice compression

**IP/Port**

If a BCU interface is selected, then this shows the IP address and port of the corresponding BCU interface on the connected NMG. If a router is used between the two NMG system, then this is the public IP address and port used to connect to the corresponding BCU interface on the connected NMG. If however a ISDN interface is selected, the IP address and port of the CCU-3 of the NMG that this system is connected to is shown, the exception to this is as above, when a router is used between the two systems, the public IP address and port of the CCU-3 is shown.

**Backplane ID**

The backplane ID of the connected NMG. This information is only available if an ISDN interface is selected

**S10 NLP dialog**

The S10 dialog shows the same information as that of the dialog for S5, S6 and S20.



This dialog shows the current status of the Client system. The actual dialog may differ (number of slots), dependant of the chassis of the client system (S6, S10 or S20). Shown are the slot information, which boards are installed in the system and their status, the profiles of the currently selected interface and their status. For more information about the status LED's please read the [following](#)

## Remote profiles

### Profile name

The name given to the profile in the configuration application.

### Server

The IP and port of the server that is associated with this profile. In the case of the remote profile is using the local multiplexing profile, the Server field contains the text **local**

### State

The current state of the selected interface. The current status of the remote profiles. The states are described below.

#### INACTIVE (0)

The profile is not active

#### STARTUP (1)

The interface is initialising, and this profile is to be initially used

#### REG\_REQ (2)

The interface is registering on the remote server

#### SIM\_REQ (3)

The interface is requesting SIM information from the server

#### SIM\_SEL (4)

The interface has successfully reserved a SIM on the server has is active

#### UNREG\_REQ (5)

The interface is requesting to un register from the server

#### NO\_SIM\_AVAIL (6)

The interface has not been able to select a SIM from the server

#### UNRESERVED (7)

The interface is releasing the SIM

#### UNRES\_SIM\_REQ\_PEND (8)

The interface is waiting for the conformation that the SIM that was previously reserved has been released

### Error

The error code of the last error that this profile received

### Priority

The priority of the profiles for this interface, i.e. in which order will they be used

### Ping

The round trip time of the communication between client and server

## Updating runs

The number of times that this dialog has been actualised

## View Connections

Opens a [dialog](#) showing the current connections to this server

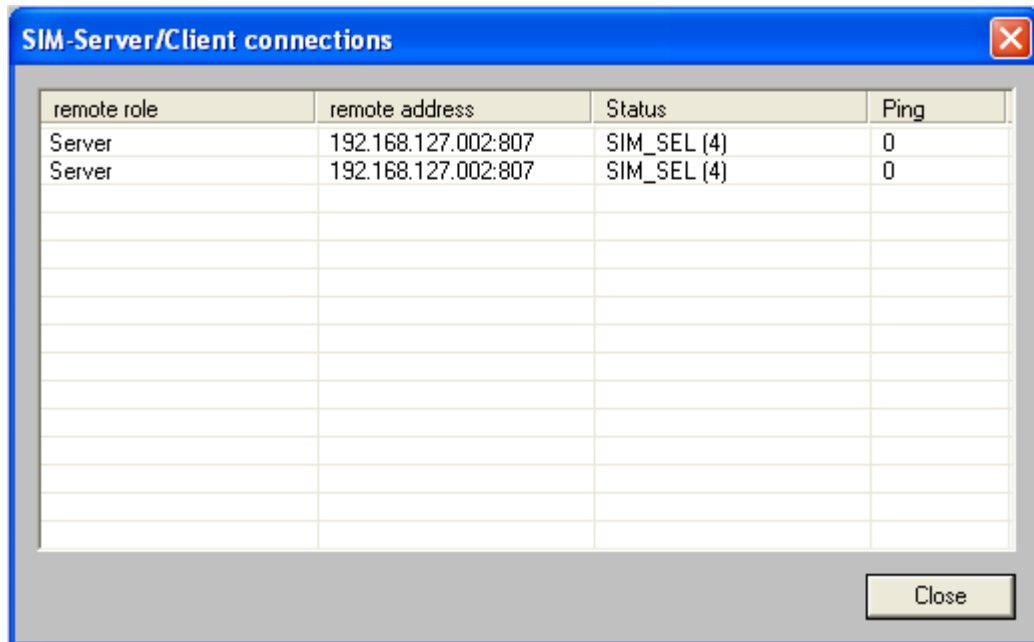
**Close**

Closes the dialog

**Help**

Opens this file

## Viewing client connections



remote role	remote address	Status	Ping
Server	192.168.127.002:807	SIM_SEL (4)	0
Server	192.168.127.002:807	SIM_SEL (4)	0

The SIM-Server/Client connections dialog is used for both the server and the client. In this instance when the TraceInfo Client is connected to a client, then the above information will be shown.

### Remote role

The current role of the connected systems. If connected to the a client, then all systems that are configured as servers are shown

### Remote address

The IP address of the remote system and it's port.

### Status

The current status of the remote system, i.e. what action it is currently undertaking. These are described below in the section [current status](#)

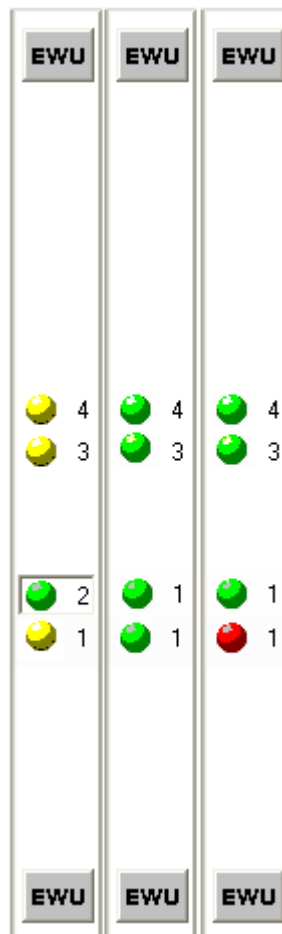
### Ping

The "ping" time between the client server connection in milliseconds (one way)



## Client LED's

Below you can see a selection of EWU boards (clients) and the various states of the LED's on them.



**Green**

The interface has access to the SIM



**Grey**

The interface is inactive



**Red**

The interface is not initialised

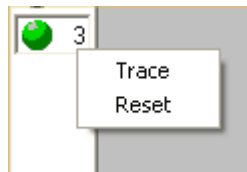


**Yellow**

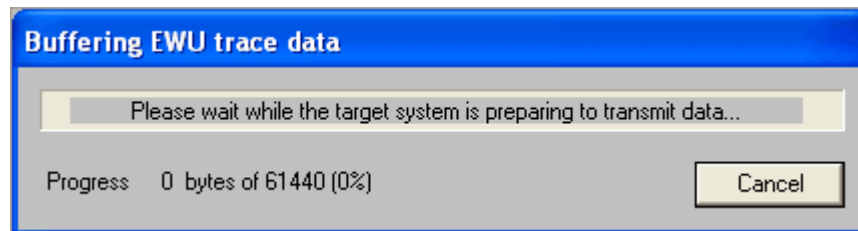
The interface is requesting a SIM

### Retrieving EWU trace information

To retrieve a trace from a EWU interface, select the EWU interface and click the **right** mouse button and the following Pop-up menu will appear



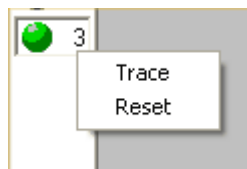
On choosing the option **Trace** , the following dialog will appear



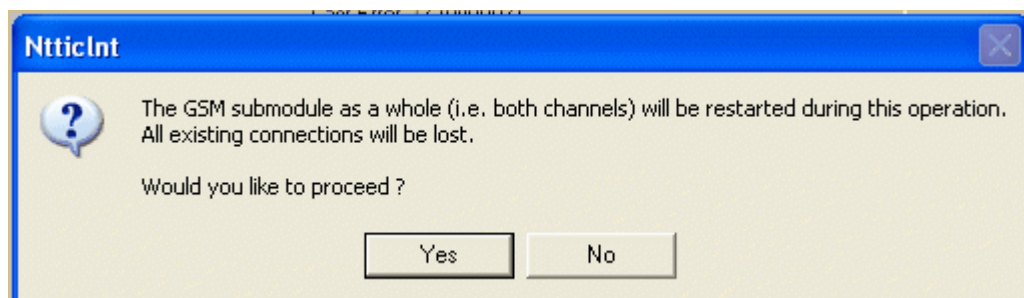
Dependent on the connection speed to the target system, this may take up to 30 seconds, then the trace information is buffered in the memory of the local machine. Then a dialog will appear, asking for a directory and filename for the EWU trace. It is advisable to save the EWU trace information in the same directory as the normal trace files. Once the file has been saved successfully, it can be viewed using the [Files](#) page

### Resetting an EWU interface

Under some circumstances it may be necessary to reset a EWU interface, right click on the EWU interface to be reset and the following Pop-up menu will appear



On choosing the option **Reset** , the following dialog will appear



To reset the EWU interface, confirm this dialog and the interface will be reset

### Note

All interfaces on the EWU will be reset!

**Server display**

This display mode is only available when an SOS is fitted and installed correctly in the target system

**SIM-Server/Client [S20/S6/S5] - Slot 3, SCU, SIM 1 (0xA200)**

The window displays a rack of 17 slots. Slots 1, 2, and 3 are labeled 'SOS'. Slots 4, 5, and 6 are labeled 'SCU'. Slots 7 through 17 are empty. Each slot contains a vertical column of status indicators (blue and green dots) and a numerical value (1, 2, 3, or 4). Below the slot display, there is a section for client data and status. The status section includes fields for SIM no., Current status, Last error, and ICC-ID. The client data section includes fields for IP/Port, System ID, EWU channel, and Ping. There are also buttons for 'View Connections', 'Close', and 'Help'. A status bar at the bottom right indicates 'Updating runs : 89'.

Slot	Label	Status Indicators	Value
Slot 1	SOS	Blue dots	1
Slot 2	SOS	Blue dots	2
Slot 3	SOS	Blue dots	3
Slot 4	SCU	Blue dots	4
Slot 5	SCU	Blue dots	3
Slot 6	SCU	Blue dots	1
Slot 7			
Slot 8			
Slot 9			
Slot 10			
Slot 11			
Slot 12			
Slot 13			
Slot 14			
Slot 15			
Slot 16			
Slot 17			

SIM no.

Current status

Last error

ICC-ID

Client Data

IP/Port

System ID

EWU channel

Ping

Updating runs : 89

As with all other dialogs, this one shows the current state of the SIM server. Shown are the installed SOS / SCU boards. The LED's on the SCU boards show the condition of the hardware and SIM's installed. For more information of the LED's please read the information in the section [SCU LED's](#). Each LED represents a SIM in the server. By selecting a SIM (done by clicking on the LED with the **left** mouse button) you can see the information as described below. The numbers on the right hand side of each SCU represent the individual SCU interfaces (1 through to 4). Each interface has five LED's which represent the five SIM holder on the SCU board

#### Note

The actual number of available slots may differ, dependant on the server systems chassis

#### SIM no.

The SIM number of the currently selected SIM (1 through to 5)

#### Current status

The current status of the currently selected SIM. There are many states, and here are the most important ones listed

##### **STARTUP (1)**

The SIM is being initialised

##### **STARTUP OK (2)**

Initialisation OK

##### **SIM FREE (3)**

The SIM is available for a client (is not in use)

##### **RES SIM REQ (4)**

Client is requesting the server to reserve this SIM

##### **SIM BLOCKED (5)**

The SIM card is blocked (budget expired, budget/time mismatch)

##### **TRANS START (6)**

Server is transmitting SIM data to client

##### **TRANS END (7)**

Transmission of SIM data to client has ended

##### **WAIT FOR KEY (8)**

Server is waiting for the key request from the client

##### **KEY REQUEST (9)**

Client has requested the SIM key

##### **REGISTERED (16)**

The SIM has been successfully registered in the GSM network by the client

##### **REL SIM CNF (18)**

Release SIM conformation (the server is confirming the SIM release from the client)

##### **NO ATR REC (19)**

SIM is not responding to **ATR** (Answer To Reset) commands (possible software fault)

##### **NO SIM INSERTED (20)**

There is no SIM card holder inserted in this position

##### **NO SIM INSERTED (21)**

The SIM card holder has been removed

##### **NO ATR REC IN HW FSM (22)**

SIM is not responding to **ATR** (Answer To Reset) commands (SIM card is more than likely defunct, incorrectly inserted or there is a hardware fault present)

##### **HARDWARE ERROR (23)**

Unknown hardware error

##### **PORT NOT ACTIVE (24)**

The port is not initialised (possibly not installed, or the SCU board is defunct)

**Last error**

The error code of the last error that occurred on the selected SIM displayed in hexadecimal format

**ICC-ID**

The **ICC-ID** of the SIM card that is currently selected

**Client Data****IP/Port**

The IP address and port of the client that is accessing/ has access to the selected SIM

**System ID**

The Back plane ID of the client system that is accessing/ has access to the selected SIM

**EWU channel**

The hexadecimal value that identifies the EWU slot number and interface that is accessing/ has access to the selected SIM

**Ping**

The "ping" time between the client server connection in milliseconds (one way)

**Updating runs**

The number of times that this dialog has been actualised

**View Connections**

Opens a [dialog](#) showing the current connections to this server

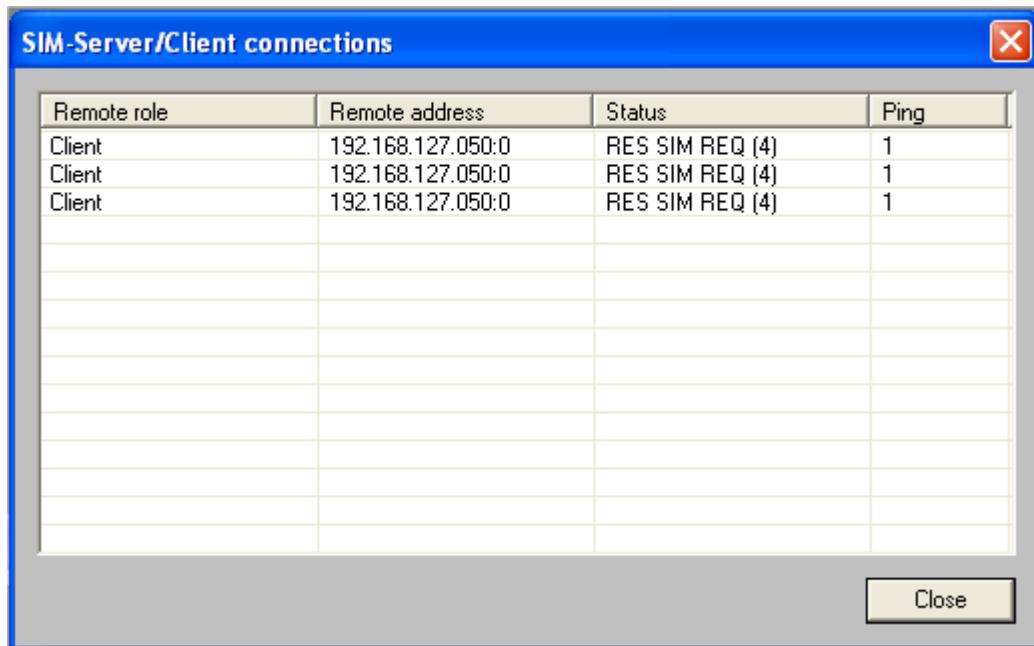
**Close**

Closes the dialog

**Help**

Opens this file

## Viewing server connections



Remote role	Remote address	Status	Ping
Client	192.168.127.050:0	RES SIM REQ (4)	1
Client	192.168.127.050:0	RES SIM REQ (4)	1
Client	192.168.127.050:0	RES SIM REQ (4)	1

The SIM-Server/Client connections dialog is used for both the server and the client. In this instance when the TracInfo Client is connected to a server, then the above information will be shown.

### Remote role

The current role of the connected systems. If connected to the a SIM server, then all systems that are configured as clients are shown

### Remote address

The IP address of the remote system and it's port.

### Status

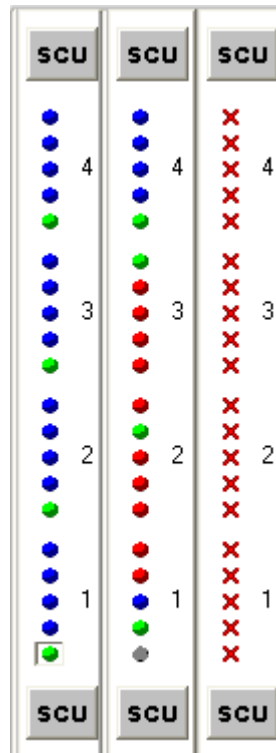
The current status of the remote system, i.e. what action it is currently undertaking. These are described above in the section [current status](#)

### Ping

The "ping" time between the client server connection in milliseconds (one way)

## SCU LED's

Below you can see a selection of SCU boards and the various states of the LED's on them.



### Green

A client is accessing or has access to the SIM

### Blue

The SIM is currently free (not in use)

### Grey

There is no SIM holder inserted in the SCU

### Red

This may have one of the following causes

The SIM holder is inserted, but there is no SIM present

The SIM is defect, has invalid data

The communication between the SIM and the SCU is not functioning correctly

### Red cross

The SCU has interface has not been correctly initialised, this may be due to

The SCU is not physically present in the system

The SCU could not be initialised

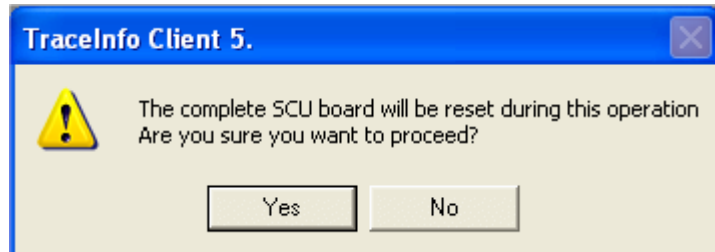
The SCU has a hardware fault

## Resetting a SCU interface

If may become necessary to reset an individual SCU board, due to configuration errors, incorrect SIM (profile) data, or a defunct SIM card. To do this, select an LED **on the SCU board to be reset** click the LED with the **right** mouse button, and the following pop-up menu will appear to the side of the LED



Click the menu item **Reset** and a dialog will appear as shown below



If you choose **Yes**, then the **complete** SCU board will be reset. **All** four interfaces will receive a reset signal, and any clients currently connected to these SCU interfaces will be cut off. You may choose **No** to abort resetting.





**Budget criterion**

The budget criterion that is presently configured. It can be by Timespan, by Budget (Charge) or if the SIM is not budgeted "...." is displayed.

**Budget Used**

The amount of budget (with Timespan the time, with Budget the currency units) used.

**Budget Limit**

The budget limit, that indicates when the SIM is to be locked.

**Remaining Budget**

The amount of the budget that remains before the SIM card is locked.

**Off limit**

The indicator that will be displayed if the budget has been reached, and that the SIM card is locked.

**Save list**

When the **Save list** button is clicked, a dialog will appear that allows you to save the present budget list to a text file (with the extension **.bud**). This text file can then be imported into another application for further use (i.e. Excel).

**Updating runs**

The number of times that the dialog has been actualised.

**Close**

Closes the budget list. The budget list data on the target system **IS NOT** deleted.

**Help**

Opens the help file (what you are now reading).

**Note**

To retrieve more information about a specific SIM, select the SIM from the list where more information is required and it is displayed in the title bar of the dialog.



**ASR (connected/calls)**

The ASR based on all calls made since the last reset. The ASR is calculated by dividing the calls, that were connected, by the number of all call attempts. This means every call, that gets connected is regarded as a successful call, and all other calls, e.g. a call that correctly alerts but is not picked up, is counted as unsuccessful

**Interval ASR (connected/calls)**

The ASR based on the calls carried out within the interval defined on the [System State](#) page. This is only a snapshot. The ASR is calculated using the same method as the **ASR (connected/calls)** described above **40% below average of provider** An indicator that shows that this GSM channel has an ASR that is 40% below the average of all GSM channels with the same provider **40% below average of all SIM's** An indicator that shows that this GSM channel has an ASR that is 40% below the average of all GSM channels of the target system

**Provider**

The provider of a the SIM card that is currently active in the GSM interface

**Call attempts**

All call attempts since the last reset. This value differs with every update of the data if the system has traffic. This value may become zero during runtime because of a overflow of the underlying data-structure. In such a case the data-structure is initialized and all counts start with zero

**List**

Displays the ASR data in as a list (as seen here) [Histogram](#) Displays the ASR data in as a histogram

**Save list**

Saves the ASR data as a CSV file, so that the ASR data can be imported into other applications for further processing

**Updating runs**

The number of times that this dialog has been updated

**Close**

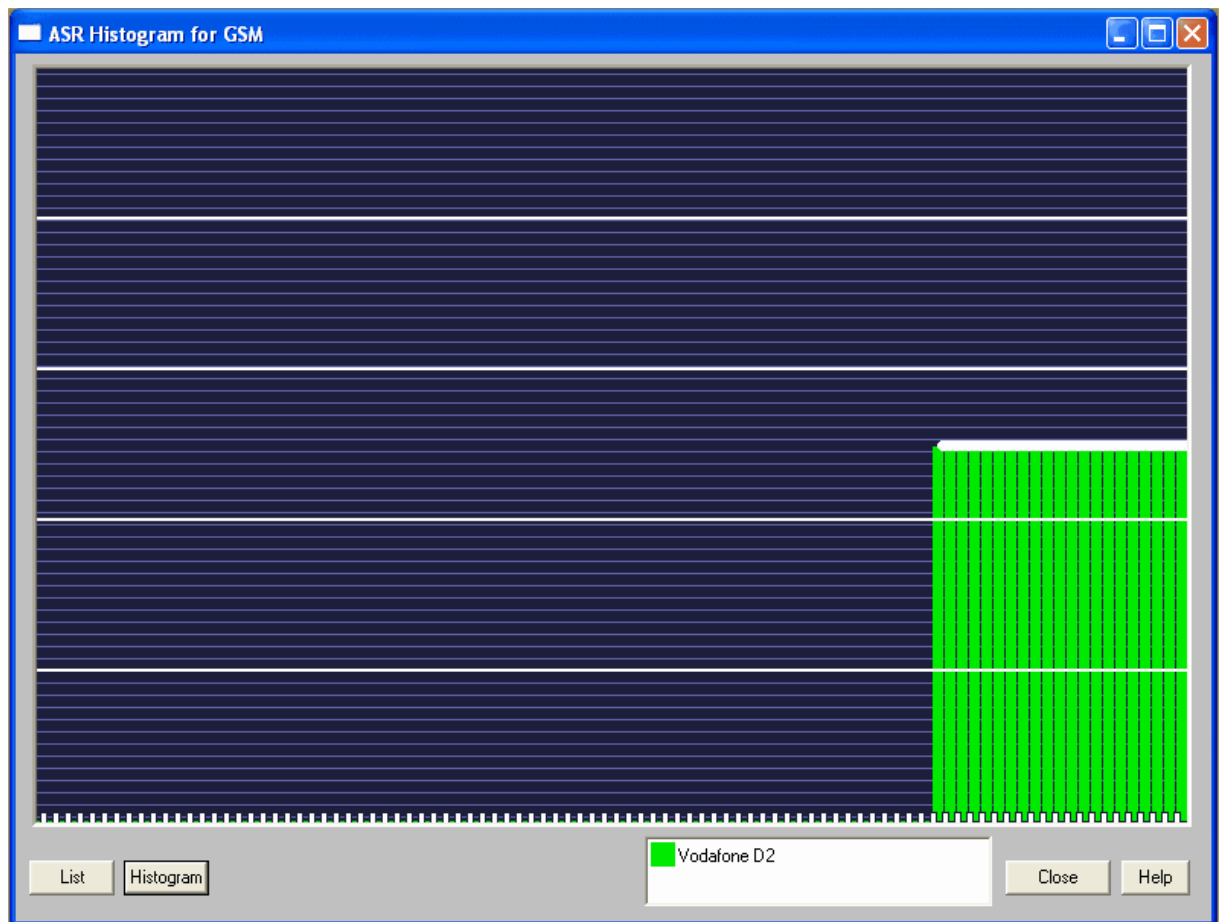
Closes the ASR dialog. The ASR data on the target system **IS NOT** deleted

**Help**

Opens the help file (this file)

### ASR displayed in a histogram

The **ASR histogram** visualizes the ASR data of the GSM channels, sorted by the providers.



As you can see, the available providers each have it's own colour, and using the provider legend the providers can be identified (in this example, Vodafone D2 is green). The four white markers running through the display represent (from the bottom) 20%, 40%, 60%, 80% and the very top being 100%. The time scale is the total time as set on the [System State](#) page, using the option

#### ASR base (min).

The smaller scale along the bottom of the display represent the time scale as set on the [System State](#) page, using the option

#### Update interval (sec).

[List](#) Displays the ASR data in as a list [Histogram](#) Displays the ASR data in as a histogram (as seen here)

#### Close

Closes the ASR dialog. The ASR data on the target system **IS NOT** deleted

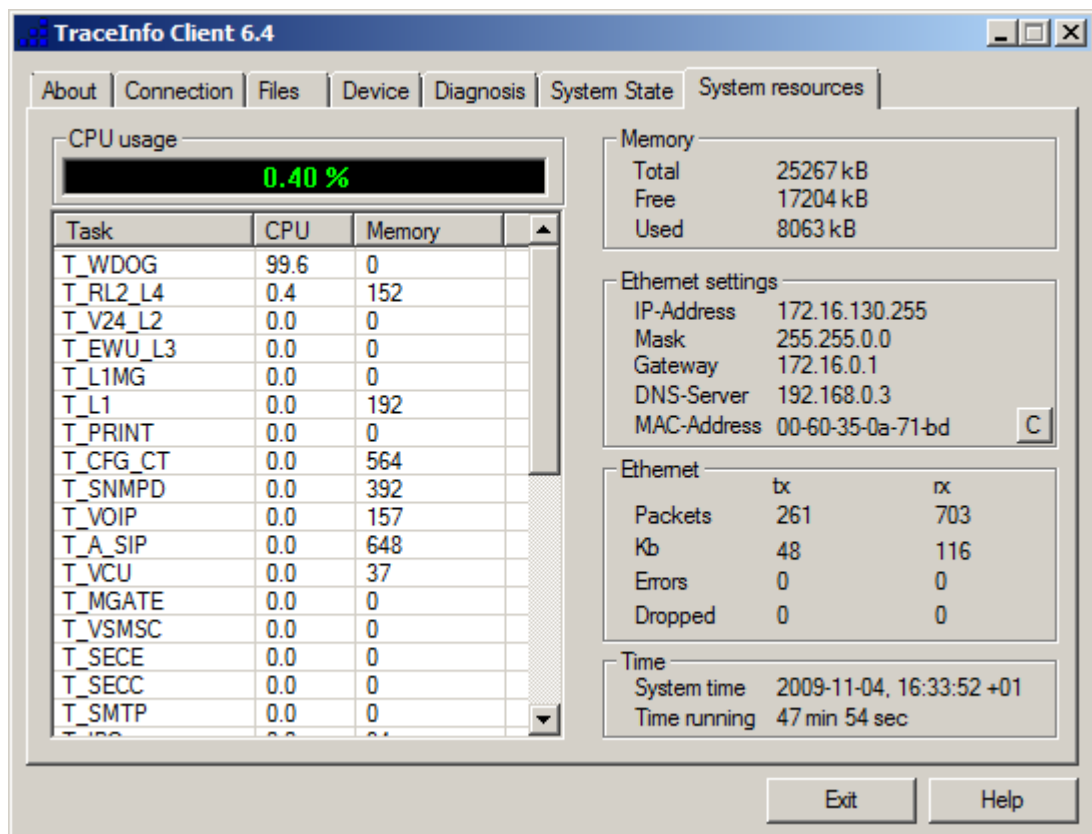
#### Help

Opens the help file (this file)

## 1.8 System resources

### System resources

This page is purely informational. It shows the internal status of the target system.



#### CPU usage

Shows the total CPU usage in percent. Also shown are the currently active tasks, their CPU usage and the memory resources used by the specific tasks.

The task T\_WDOG is the watchdog/idle task.

#### Memory

Shows the memory status of the target system

##### Total

The total memory (RAM) installed on the system

##### Free

The total available memory (RAM)

##### Used

The total memory (RAM) currently used

**Ethernet settings**

The current network settings of the target system. This information is only available if the following boards are installed on the target system

CCU-3

SOS

CBS

MCU

**IP-Address**

The current IP address of the target system (if the system has an Ethernet connection)

**Mask**

The mask of the target system

**Gateway**

The current gateway of the target system

**DNS-Server**

The current DNS server of the target system

**MAC-Address**

The MAC address of the Ethernet interface installed on the target system

**Ethernet**

The current network traffic on the target system. This information is only available if the following boards are installed on the target system

CCU-3

SOS

CBS

MCU

	tx	rx
Packets (total)	transmitted	received
Kb (Kilobytes)	transmitted	received
Errors (total)	transmitted	received
Dropped (packets)	transmitted	received

**Time**

Shows the current system time of the target system, and the total time the target system has been running since the last reset

## 2 What's new

### What's new

#### What's new in version 6.4

##### New Features

- SSL/TLS supported

##### Changes

None

##### Bug fixes

None

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