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Product Sheet

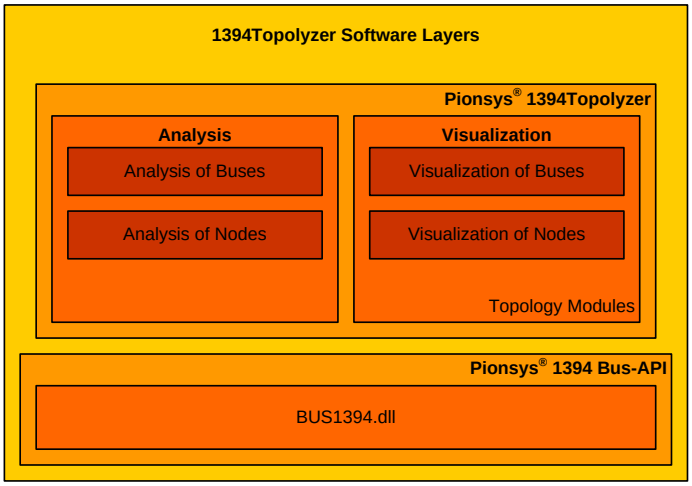
1394Topolyzer

The Network oriented IEEE1394 Analysis Tool

The **Pionsys® 1394Topolyzer** is a software tool for the analysis and visualization of IEEE1394 (FireWire) based systems. With the **1394Topolyzer**, the development process and the functionality of IEEE1394 hardware and software is controlled and optimised.

The **1394Topolyzer** is the ideal supplement to the **Pionsys® 1394 Bus-API**, as it provides important information about the actual situation on the IEEE1394 bus and the behaviour of the present IEEE1394 devices. Possible error searching is done efficiently and fast, thus saving development time and minimizing the costs.

The following draft shows the basic software structure of the **1394Topolyzer**:



*The software layers of the **1394Topolyzer***

The **1394Topolyzer** offers extensive information about the chosen IEEE1394 bus and its connected IEEE1394 devices. Further diverse device functions (such as read-, write- and lock-transactions and the structure of the configuration-ROM) and standard conformity of devices can be tested easily and with little effort.

Areas of Application:

- introduction and training in IEEE1394
- PC-based prototyping
- test of IEEE1394 applications
- simple tests of IEEE1394 devices
- conformity tests
- analysis and visualization of complex IEEE1394 networks

The main tasks of the **1394Topolyzer** are shown below:

- flexible visualization of the present IEEE1394 buses and devices
- extensive analysis of IEEE1394 buses and devices

For applications which require besides the functionality of the **1394Topolyzer** even more access to the present IEEE1394 buses and devices, the **Pionsys® 1394Devolyzer** is available.

Besides the complete functionality of the **1394Topolyzer,** the **1394Devolyzer** additionally offers open software interfaces and therefore the possibility to create and load proper software modules (DLL plug-ins) for present IEEE1394 buses and devices at runtime. By this way the functionality of the **1394Devolyzer** can be extended and adapted to the current requirements with little effort and at any time. As a result, the **1394Devolyzer** also is ideally suited for rapid prototyping and development studies.

Flexible Visualization

In order to provide highest flexible visualizations, interchangeable *Topology Modules* were developed for the **Pionsys® 1394Topolyzer**.

Topology Modules:

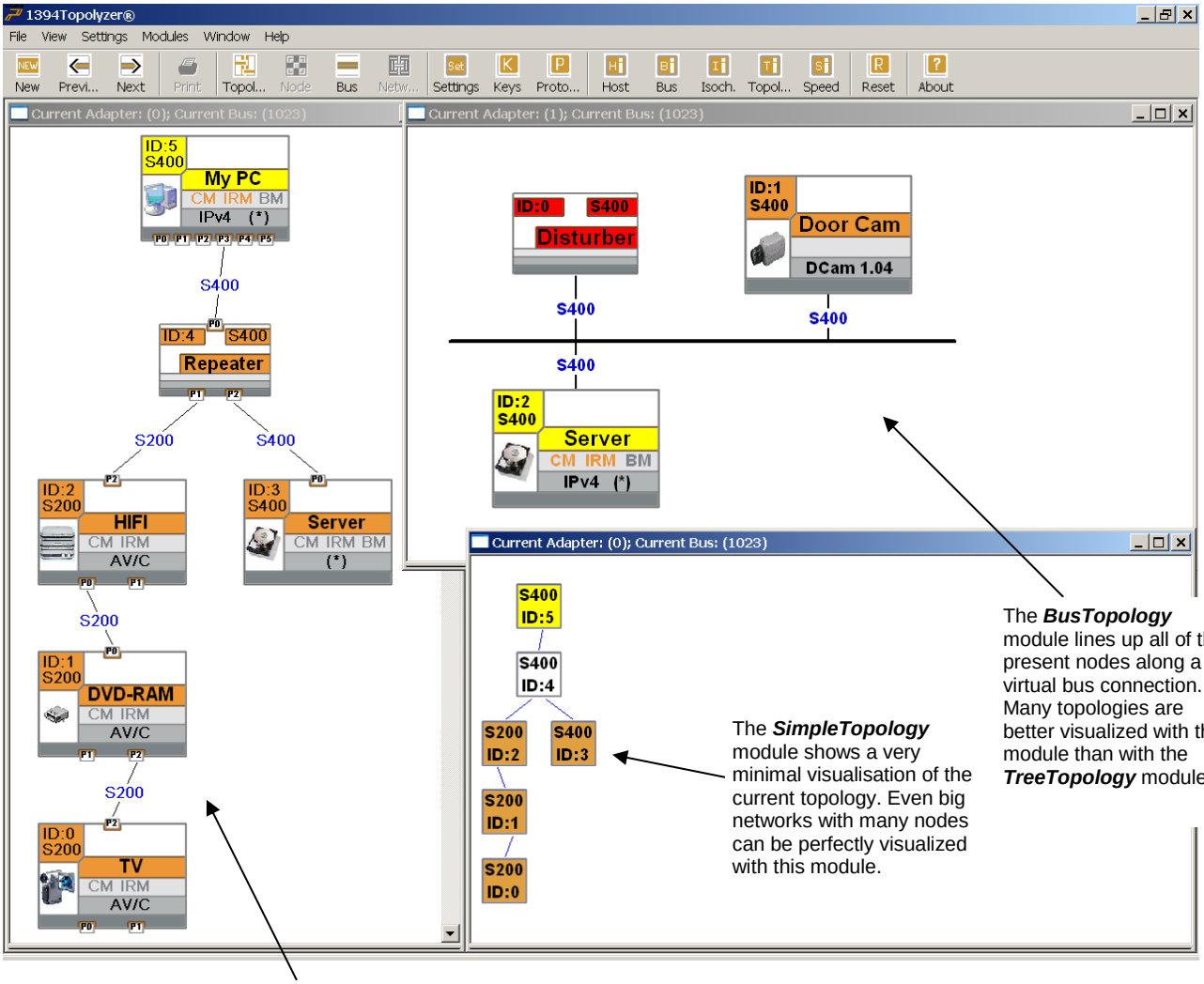
A *Topology Module* is always implemented as DLL plug-in and visualizes a specified IEEE1394 bus and all of its currently connected IEEE1394 devices. In addition, it performs graphical tasks for the main program, like zoom and scroll operations.

During runtime, *Topology Modules* can be loaded, changed and closed by the user at any time.

The **1394Topolyzer** is able to load and visualize several *Topology Modules* simultaneously. As a result, it is possible to visualize and analyze different views of buses and/or different views of different buses at the same time. Apart from a few given interfaces, there are no limitations for *Topology Modules.* E.g. it is possible to load a *Topology Module* which visualizes only the present AV/C devices and ignores all other devices. Also the order of the displayed IEEE1394 devices on the screen and the used painting functions can be independently chosen by each *Topology Module.*

Because of these possibilities, further *Topology Modules* for specialized applications can be developed by **Pionsys®** on request.

The **1394Topolyzer** is shipped with three different *Topology Modules*. The following screen shot shows the three *Topology Modules* and also briefly describes each module.



The ***TreeTopology*** module visualizes the physical tree topology. The essential information about the node's phy-IDs, the highest possible speed of the nodes, the supported protocol(s), the usage of ports, the model string from the configuration-ROM and a user-defined bitmap are visualized for each active node.

The description of the node and the outlined bitmap can be assigned to each node individually or to an entire device group by the user.

Devices without an active link layer (*Repeater*) are visualized by smaller bitmaps and include less information, as they do not own a configuration-ROM and therefore cannot be identified.

The **1394Topolyzer** detects non standard conform devices and visualizes them as *Disturber* (red). Consequently such devices can be detected within the network and they can be removed if required.

Extensive Analysis

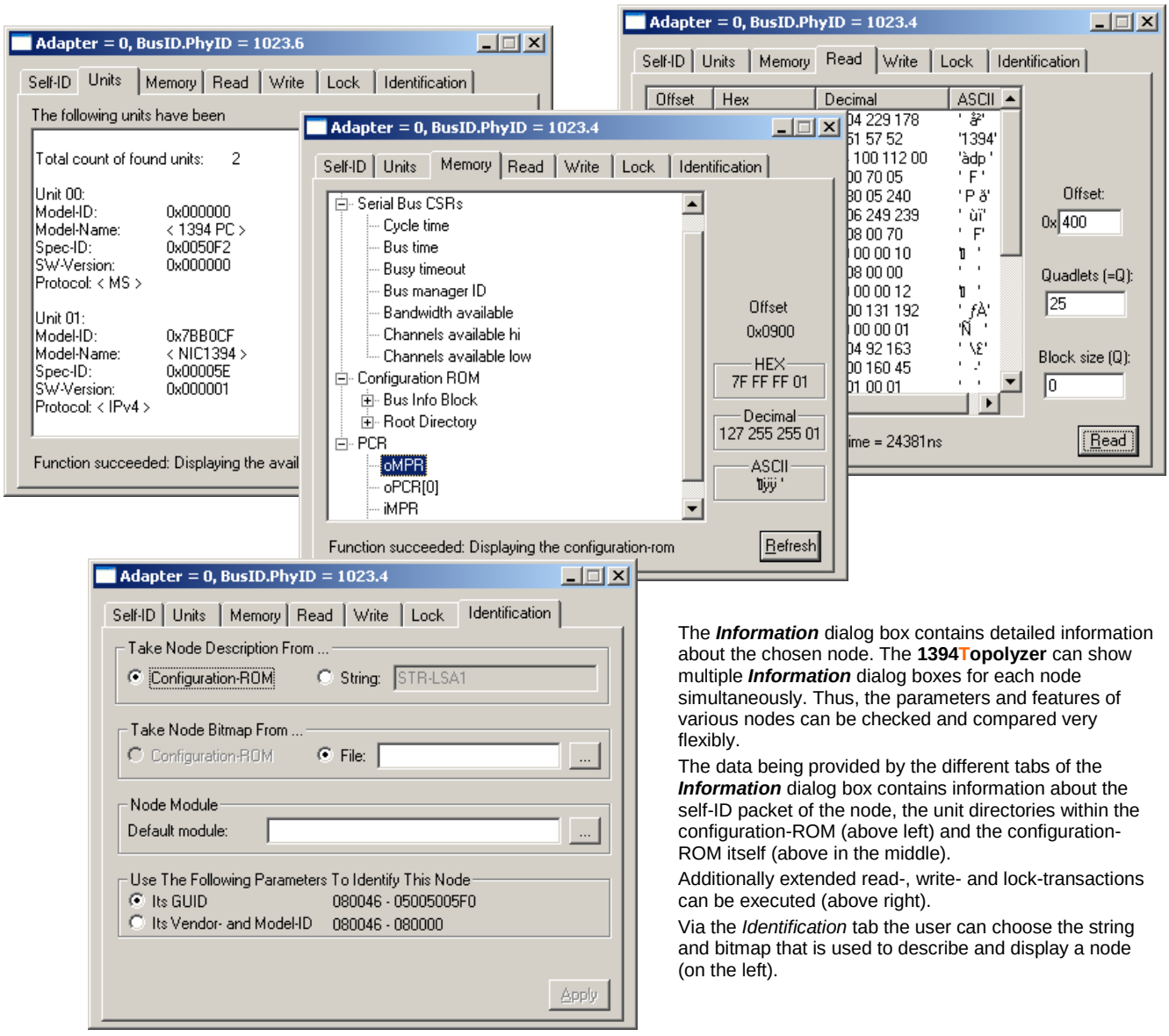
The basic task of the **Pionsys® 1394Topolyzer** is the analysis of present IEEE1394 buses and devices. In order to pass detailed information to the user, the **1394Topolyzer** provides a large range of extensive and informative dialogs. All dialog boxes can be opened in parallel, which enormously simplifies the comparison between IEEE1394 buses and/or devices.

Available Information:

- output of current self-ID packets and topology map
- output of available isochronous resources
- output of information about the features of the used IEEE1394 OHCI host adapter
- output of available information about the chosen bus (e.g. output of the generation, gap count, current manager nodes (CM, IRM, BM), number of devices)
- determination of the maximum speed between any two nodes
- output of the complete configuration-ROM of each node with an active link layer
- execution of read-, write- and lock-transactions with each active node

In addition, the output and the behavior of the different dialogs can be adapted individually by the user. The defined settings are saved separately for each user and are automatically restored with each start of the **1394Topolyzer**.

Some of the program's internal dialog boxes are illustrated and described by the following screen-shots. A detailed description of all dialogs and available functionalities can be found in the detailed HTML help system that is shipped with the program and available for free from www.pionsys.com.



The ***Information*** dialog box contains detailed information about the chosen node. The **1394Topolyzer** can show multiple ***Information*** dialog boxes for each node simultaneously. Thus, the parameters and features of various nodes can be checked and compared very flexibly.

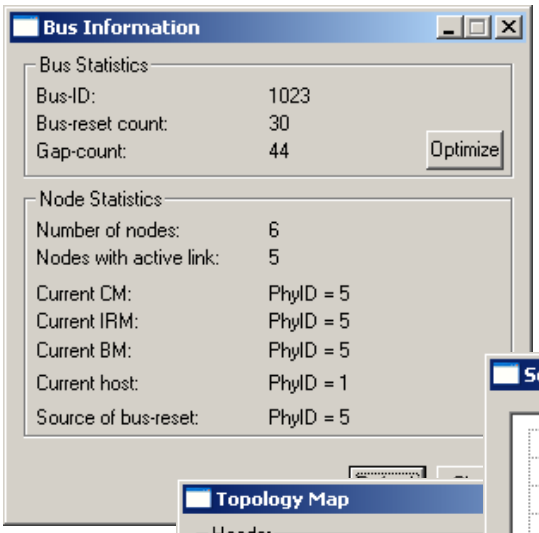
The data being provided by the different tabs of the ***Information*** dialog box contains information about the self-ID packet of the node, the unit directories within the configuration-ROM (above left) and the configuration-ROM itself (above in the middle).

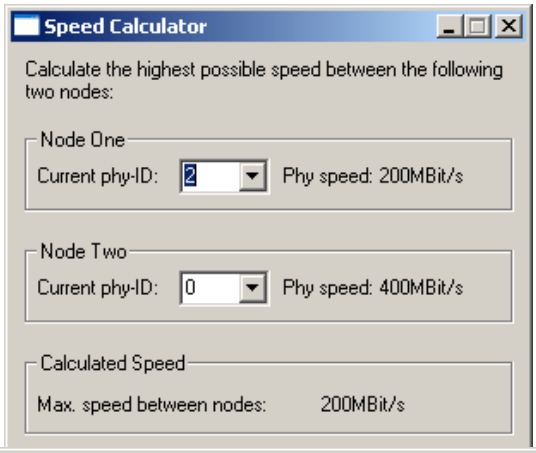
Additionally extended read-, write- and lock-transactions can be executed (above right).

Via the *Identification* tab the user can choose the string and bitmap that is used to describe and display a node (on the left).

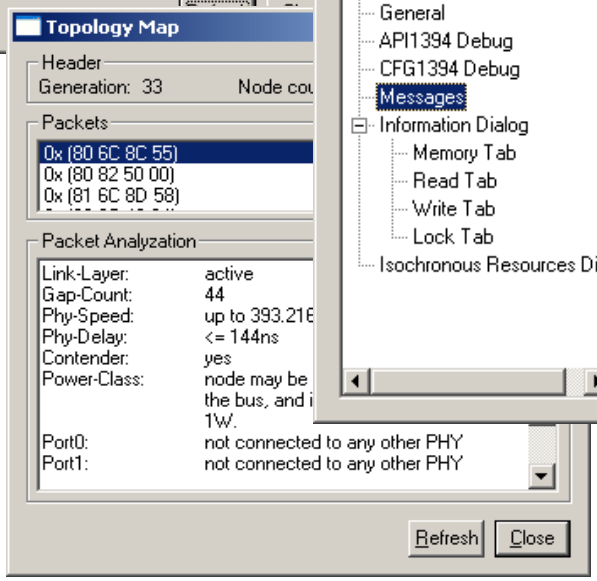
Extensive Analysis

The ***Bus Information*** dialog box shows the current information about the chosen bus and the present nodes.

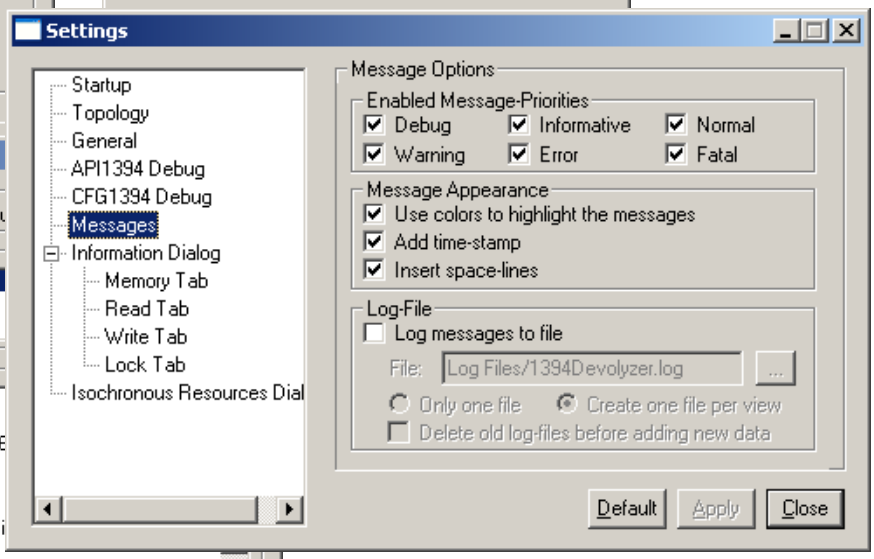




The highest possible speed between any two IEEE1394 devices can be calculated with the ***Speed Calculator*** dialog box.



The ***Topology Map*** dialog lists all of the current self-ID packets. In addition, the user can pick each self-ID packet and analyze the contained values and parameters.



Via the ***Settings*** dialog box the user can change the parameters of the program.

On the **Pionsys®** homepage www.pionsys.com, demo versions and documentations of all products are available as free downloads. There also the latest development information as well as the latest news and update information of our products is found.

Requirements

The following requirements must be fulfilled for the operation and usage of the **Pionsys® 1394Topolyzer**:

- PC or Laptop with at least one IEEE1394 (FireWire) OHCI host adapter
- Microsoft Windows XP or higher
- Microsoft Visual Studio 2005 or higher

The **Pionsys® 1394 Bus-API** is part of the **1394Topolyzer** and already included in the package.

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