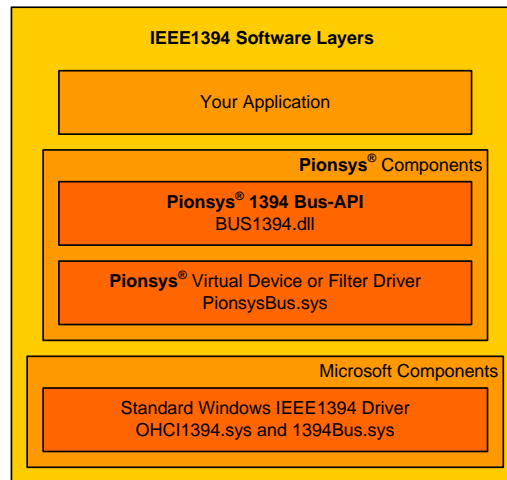


The Device independent IEEE1394 Development Platform

The **Pionsys**[®] **1394 Bus-API** allows fast and simple access to any chosen IEEE1394 (FireWire) hard- and software, without any need of extensive, time consuming or operating system specific IEEE1394 programming. With the usage of standard hard- and software highest hardware independence and flexibility are guaranteed while keeping costs low.

The following draft describes the software elements that are required for an IEEE1394 application:



The software layers of an IEEE1394 application

The **1394 Bus-API** provides all functionalities and interfaces which are required for development, testing and analysis of IEEE1394 hard- and software.

Included Functionalities:

- sending of asynchronous read-, write- and lock-commands to any device of choice
- dynamic recognition and updating of the current bus configuration
- functions for the determination of the physical addresses of the current manager nodes
- providing of information about the available isochronous resources
- simple and comfortable functions for the start, administration and termination of isochronous transfers (e.g. for the real time transmission of videos)
- a row of comfortable functions to identify any IEEE1394 device of choice
- device handles, which enable the communication with an IEEE1394 device regardless of the bus configuration and the device' current physical address
- support of multiple host adapters, which means an application can access all installed IEEE1394 OHCI host adapters and all connected IEEE1394 devices in parallel
- establishing of address areas for the recognition and processing of read-, write- and/or lock-commands that are addressed to the PC

During development of the **1394 Bus-API**, special attention was paid to ensure easy handling of all available functions and to provide an extensive documentation. In order to find any necessary information very quickly, a detailed HTML help system with a lot of links and cross references is available for the programmer.

Various well documented source code samples and sample programs give additional information about the possibilities and usage of each function and guarantee a fast and very effective application development.

1394 Bus-API vs. 1394 Device-API

The differences between the **Pionsys® 1394 Bus-API** and the **Pionsys® 1394 Device-API** are found mainly in the way of installation and how an IEEE1394 device is accessed. While the bus driver of the **1394 Bus-API** is installed only once and immediately gains full access to all attached IEEE1394 devices, the device driver of the **1394 Device-API** must be installed separately for each IEEE1394 device.

Based on this major difference, the following descriptions help to decide which API is to be used for which projects:

- The **1394 Bus-API** offers many advantages for rapid prototyping and IEEE1394 applications that operate with several IEEE1394 devices. Through the possibility to address and select multiple IEEE1394 devices at the same time and without additional driver installations, the **1394 Bus-API** is ideally suited for control, analyze, statistic and test programs on IEEE1394 buses.
- The **1394 Device-API** is used for developing of Windows applications that are designed to access a certain IEEE1394 device. Because Microsoft Windows expects that a device driver is provided for each new IEEE1394 device, the **1394 Device-API** is the right choice for the developer of the Windows software of any IEEE1394 product.

Application Development with the 1394 Bus-API

Through the usage of the **1394 Bus-API**, extensive advantages for both the hardware and the software development are given. These advantages are:

- Minimization of prime costs through the usage of standard hardware and software.
- The expensive development of drivers is completely eliminated. Thus, initial time is tremendously saved and the proper application is produced much faster. This reduces development costs drastically.
- The **1394 Bus-API** provides various functions which enormously simplify the identification of and the work with IEEE1394 devices. These functions supply applications with necessary information about each present IEEE1394 device.
- In case several IEEE1394 hardware and/or software modules have to be developed, the existing development environment can be reused all over again.
- The **1394 Bus-API** can be used for any IEEE1394 device and/or for several IEEE1394 devices at the same time. As a consequence, the writing of test and end applications for IEEE1394 networks with several devices is shortened and simplified.

The **1394 Bus-API** supports both hardware and software developers when developing new IEEE1394 products. Through the extensive functionality and the wide operational area there are hardly any limits for the IEEE1394 application development in connection with the **1394 Bus-API**.

For extensive visualization, analysis and testing tasks during the IEEE1394 development, **Pionsys®** also offers the **1394Devolyzer**, a comprehensive development solution. The **1394Devolyzer** provides many functionalities and possibilities which support the user during each design phase of the development, thus providing further shortening of development costs and time-to-market.

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® 1394 Bus-API**:

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

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The entire contents were verified to the best knowledge and belief and found as correct.

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