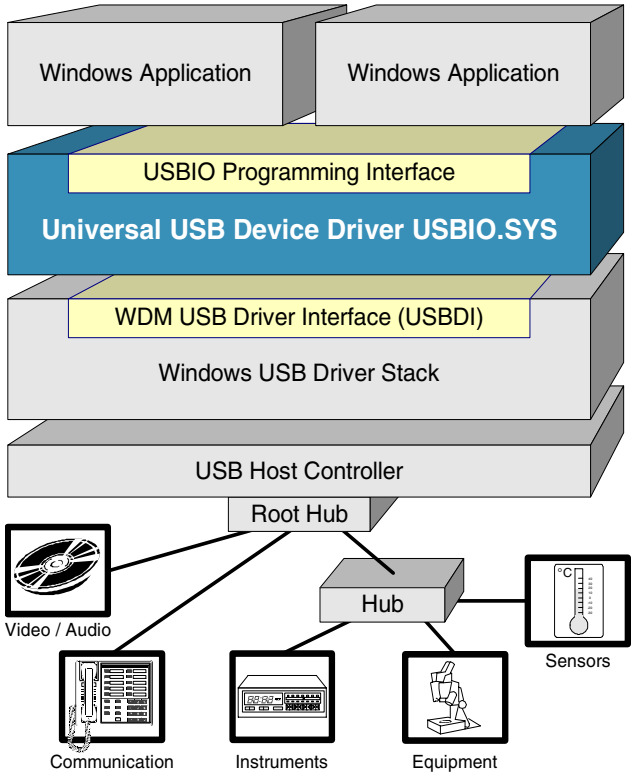
USBIO Development Kit

Thesycon® Systemsoftware & Consulting GmbH

USB Software Development Kit for Windows

The Universal Serial Bus (USB) is supported in all current Windows operating systems. Drivers for USB host controllers and USB hubs are provided as part of the operating system, as are drivers for various standard USB devices. Standard USB devices are those which belong to one of the device classes specified by the USB Implementers Forum, such as the HID class. These are normally supported by device drivers already included in the Windows operating system, and Windows applications communicate with standard devices using the appropriate software interfaces.

In many cases, it is not possible to assign a particular USB device to one of the given device classes, and a custom USB device driver is necessary. This is a kernel-mode driver which conforms to the Windows Driver Model (WDM). Developing such a driver requires specialist knowledge in kernel-mode programming and a deep understanding of operating system internals. The development and debugging process can be very time-consuming. These development efforts can be avoided using the USBIO Development Kit. The kit includes a universal device driver and additional software components, thereby providing a complete development environment for creating USB solutions.



The USBIO Device Driver

The core component of the development kit is the generic device driver USBIO.SYS. It provides Win32 applications with direct access to USB devices, enabling application developers to control any kind of USB device available. The USBIO driver provides an extensive programming interface based on standard Windows API functions such as ReadFile, WriteFile, and DeviceIoControl. It supports the complete USB functionality and is optimized for maximum efficiency. Data transfer to or from USB devices is very similar to standard Win32 file I/O operations.

Easy Installation

The USBIO Installation Wizard allows quick and easy installation of the USBIO driver for a particular device. The wizard creates a setup information file (INF) adapted for the selected device. This INF file can also be used as a starting point for building a customized driver package. Automated deinstallation of the driver is supported by another tool called USBIO Cleanup Wizard.

Features

- Supports Windows 98, ME, 2000, XP, Server 2003, XP x64, Server 2003 x64, XP embedded
- All kernel-mode USB functions are available at the Win32 API level
- Design and implementation is optimized for efficient data transmission
- USBIO device driver provides an intuitive and convenient programming interface, similar to file I/O
- Native programming interface support for C, C++, Delphi, and Java, extended support for C++
- Extended support for Visual Basic, Delphi and C# via COM-based high-level programming interface
- Supports vendor-specific customization

Supported platforms:

Windows	98/ME	2000	XP	XP x64
USB 1.1	•	•	•	•
USB 2.0		•	•	•

USBIO Programming Interfaces

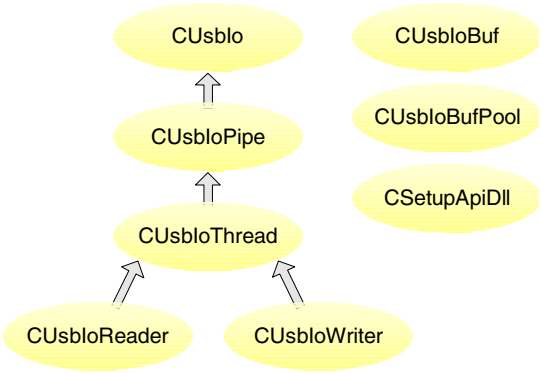
The Win32 native USBIO programming interface is ideal for use in programming languages such as C and C++. The USBIO Development Kit includes a C++ class library, providing an easy-to-use interface. To support Java application development, a Java class library that is based on a JNI DLL is provided.

A high-level programming interface, the USBIO COM interface, is also available. This is based on Microsoft's Component Object Model (COM) technology and provides an extension to the native USBIO programming interface. The COM interface allows the easy integration of USB functionality into Visual Basic, Delphi and C# applications.

Extensive documentation of all the software interfaces is provided in PDF format. Several source code examples demonstrate usage of the programming interfaces and show how an application controls a USB device.

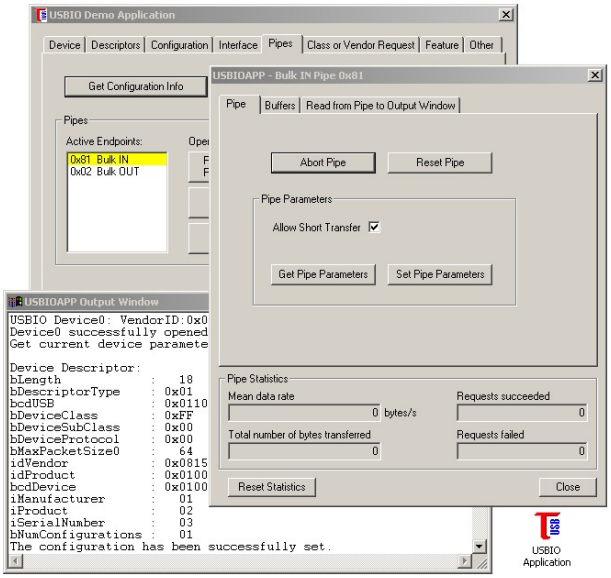
The USBIO Class Library for C++

The USBIO Development Kit includes the source code of a C++ class library, which simplifies the use of the USBIO programming interface in applications. The library provides wrapper classes for all driver functions and some extended functionality, such as management of worker threads. The library can easily be enhanced by additional classes in order to meet the requirements of a particular application.



Test and Demo Application

The development kit also includes the source code of a full-featured test application. The application, written in C++ using the MFC, is based on the USBIO class library. It allows interactive testing of individual device functions as well as the set-up of bulk, interrupt, or isochronous data transfer. It is thus a very useful test tool for developing USB devices and firmware.



Free Evaluation Versions

The following evaluation packages are available for download at http://www.thesycon.de/usbio/:

- A free, time-limited USBIO Demo version with full functionality. The demo version is intended to give a first insight into the development kit.
- A USBIO Light version with limited functionality but no time limit. USBIO Light is free of charge and can be used for simple devices.

Licensing Structure

There are various levels of licensing available:

- The Developer License allows use by one person during product development.
- The Runtime License allows royalty-free redistribution of software components for use with multiple hardware products.
- The USBIO Driver Source Code License includes the source code of the USBIO kernel-mode driver.
- The USBIOCOM Source Code License includes the source code of the USBIO COM component.

The complete license agreement and a current price list can be found on the Thesycon website.

THESYCON

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