

Overview

The AVT Active FirePackage (AFP) is a software development kit (SDK) that focuses on ActiveX Control based programming, but also provides interfaces for DirectShow and TWAIN for interfacing to third-party imaging software.

The SDK is compatible with Microsoft Windows (Vista, XP, 2000) and includes an IEEE1394 digital camera system driver that is based on the Windows Driver Model (WDM). The driver can be installed manually, but also via an automatic driver install tool.

The AFP has been created for programmers who are familiar with ActiveX Controls, COM, DirectShow or TWAIN, and who want to achieve their goals quickly in a comfortable way by using application development tools such as Visual C++, Visual Basic, VB.NET, C#, Java, Delphi, or others.

This document provides an overview of the components and their versions provided with the AVT Active FirePackage v1.1. Furthermore, the package architecture is shown (see figure 1) and additional information about the system requirements and certain constraints of this release are listed.

Package content

This version of the AVT Active FirePackage contains the following components:

- **Camera system driver** – based on the Microsoft IEEE1394 driver set, suitable for all AVT IEEE1394 cameras.
- **ActiveX Control** – powerful, multi-function COM interface that provides various PropertyPages to configure the camera and the settings for image acquisition and supports many events.
- **DirectShow filter** – In addition to a (WDM) Video Capture Source filter (see figure 1 for supported DirectShow interfaces) AVT camera specific transform filters for YUV411 and Y800 output formats are provided to support DirectX based video streaming applications.
- **TWAIN driver** – Standard interface to many third party imaging applications.
- **Demo viewer** – Application with full-screen video window, to operate multiple cameras and save images in various formats.
- **Automatic Driver Install Tool** – user controlled driver installer that enables both the installation of the driver for all AVT cameras connected to the system, as well as the required driver for the system integrated OHCI compliant host adapters, to insure proper operation of the AFP.
- **User Guide** – Extensive documentation available as CHM (HTML-based help file) and PDF file.
- **Example Collection** – Lots of well documented examples for Visual C++, Visual Basic, VB.NET, C#, Delphi, and HTML showing ActiveX, COM, and DirectShow style programming to minimize programmer's learning time.

Package architecture

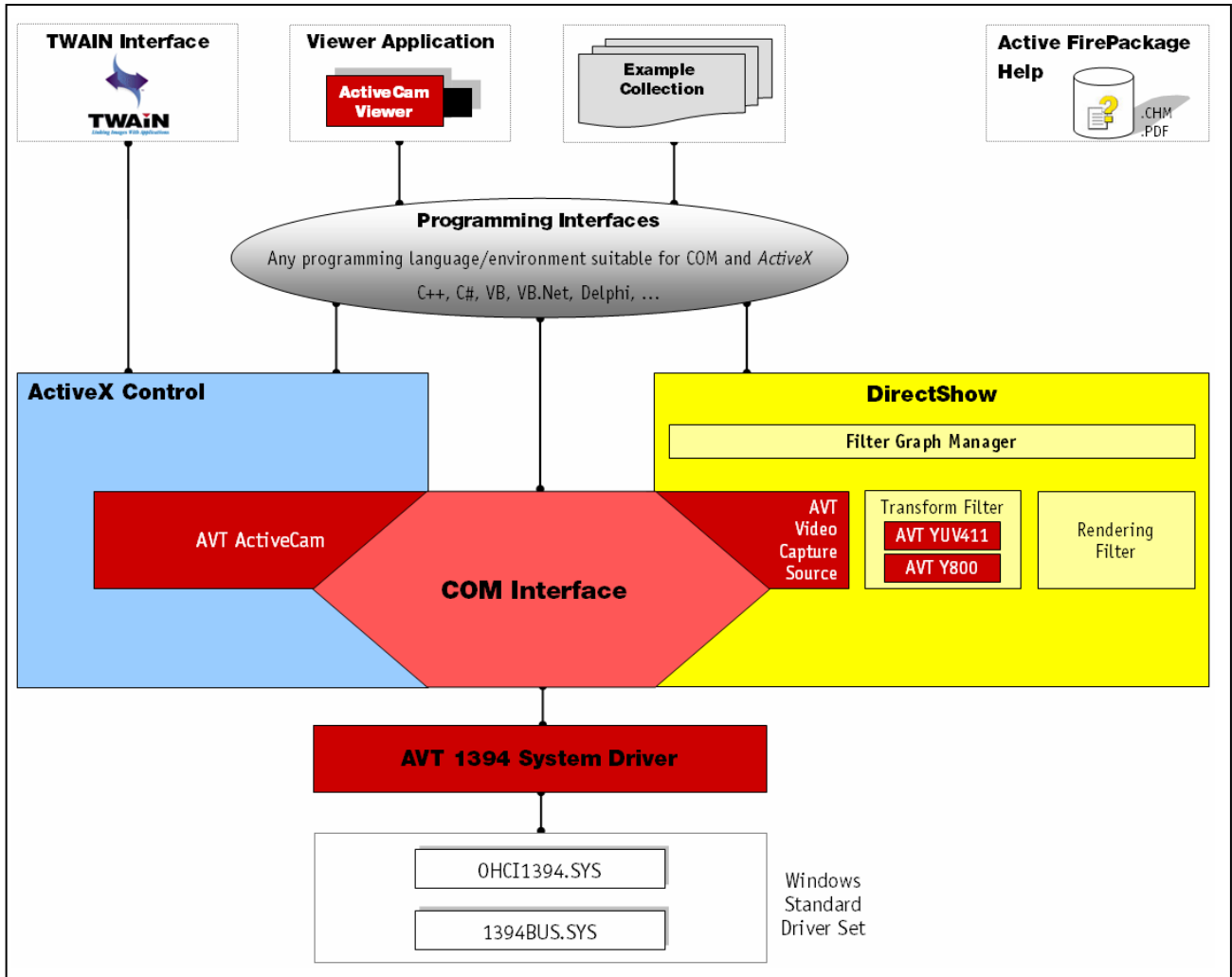


Figure 1: Architecture of the AVT Active FirePackage v1.1

System requirements

Software

- OS-Support for Windows Vista¹, XP (SP2)² and Win2000 (SP4)
- Installation of Direct-X 9.0c
- .NET FrameWork 2.0 or higher (for .NET compatibility)

¹ Currently no S800 support provided by Microsoft for Vista

² With Windows XP SP2, 1394b devices default to only S100 speed. To enable S400 with 1394b, there is an official Microsoft hot-fix KB885222, and S800 support can only be achieved by a 'rollback' to 1394 OHCI drivers that come with Windows XP SP1.

Hardware

- Pentium II 400 MHz or better CPU recommended
- A graphics card supporting 65535 colors or higher
- One or more IEEE1394a or IEEE1394b interface cards or FireWire PCMCIA notebook card installed on the system
- One or more AVT IEEE1394 cameras connected to the system
- 10MB disk space

Please Note:

AVT Active FirePackage only supports AVT cameras. Third-party IIDC 1394-based digital camera as well as DV camcorders and some other cameras that have an IEEE1394 (FireWire) physical interface, can not be used with the AFP.

Quick version overview

Driver Components

- | | | |
|--------------------------|-------------------------------------------------------------------------------------|---------|
| • 1394DCAM.sys | AVT 1394 Digital Camera driver | 3.0.0.2 |
| • avtactivecam.ds | TWAIN driver | 2.0.4.0 |
| • AFPDriverInstaller.exe | Driver installation tool for AVT IEEE1394 cameras and IEEE1394 OHCI host controller | 1.0.0.0 |

Application Programming Interfaces

- | | | |
|--------------------|-----------------|----------|
| • AVTActiveCam.dll | ActiveX control | 4.1.0.10 |
|--------------------|-----------------|----------|

DirectShow Filters

- | | | |
|------------------------------|---------------------------|---------|
| • AVTCaptureSourceFilter.dll | DirectShow capture source | 1.5.0.3 |
| • AVT_YUV411.ax | DirectShow filter | 1.0.1.0 |
| • AVT_Y800.ax | DirectShow filter | 1.0.1.0 |

Viewer Applications

- | | | |
|----------------------------|--------------------|---------|
| • AVT_ActiveCam_Viewer.exe | Camera demo viewer | 1.0.7.0 |
|----------------------------|--------------------|---------|

List of changes

Changes from version 1.0 to v1.1

- Implemented .Net support to the DirectShow interface.
- The provided DirectShow filter support to play-back compressed videos recorded in Y800 or YUV411 format.
- AVT ActiveCam viewer application:
 - added a status bar
 - removed 'camera plugged/unplugged' message
- The maximum image size of Oscar 810C cameras is no longer restricted to 2048x2048 pixels.

Known issues

Camera handling with AVT ActiveCam viewer

- Hot plugging of cameras while the AVT ActiveCam viewer application is running might cause the application to terminate if more than one camera is connected.
- Fast format changes on very fast computers, especially with multi-core processors, may cause that the viewer will not accept a format change request and will instead display an 'insufficient bandwidth' message for a very short time.

ActiveX control

- The AVTActiveCam control provides only RGB output formats as long as the display is set to 'on' via the corresponding PropertyPage.
- Auto-Shutter: The shutter slider of the property pages is not be updated after disabling the auto-shutter checkbox.

DirectShow

- The DirectShow Capture Source supports only RGB output formats as long as the display property is set to 'on'.
- It is not possible to select for each camera a separate capture source. Under DirectShow only an 'AVT 1394 Digital Camera' can be selected and the actual camera type has to be selected via the pin properties of the AVTCaptureSourceFilter.
- The DirectShow filters AVT_Y800 and AVT_YUV411 are not 100% compatible with the AVTY800 and AVTYUV411 filters provided with the DFP (v4.10 or older), because the output formats of the capture sources are different.
- 3rd-party DirectShow applications
 - AVT has successfully tested the following DirectShow-compliant applications together with the AFP:
 - AmCap (v9.0+)
 - Video Capturix (v7.08+)

Remark

Please note that the display property has to be set to 'on' to insure proper operation.

- Microsoft Movie Maker
The Movie Maker currently may only be used with AVT cameras as long as the AVT Active FirePackage is not installed.

Vista

- Windows Vista's User Account Control (UAC) prevents the compilation of example projects if those are opened directly from a location protected by UAC (i.e. C:\Program Files\...). Therefore, to compile the AFP example projects under Windows Vista, either copy the project to a user-writable location or disable the UAC feature.

- On Windows Vista systems recorded AVI files may not be played with the Windows Media Player. As a workaround it might be helpful to update the installed codecs or to play the movies with a player different from the Microsoft Media Player.

Remarks:

- *According to tests at AVT other video players such as 'videoLAN' client (www.videolan.org) currently works fine.*
- *Furthermore, tests with the preliminary SP1 of Windows Vista do not indicate the described problem.*

General

- For proper operation it is required to uninstall any beta version (v0.9.x) of the AFP.
- The installation of the AVT Active FirePackage will cause a restricted usage of the ActiveDCAM SDK and vice versa. In any case it is only possible to use the product which was installed last.

Remark:

Please note that you will still be able to run all applications inside the Sample folder and even the demo viewer, but you will not see AVTActiveCam control in the list of ActiveX controls.

Support

Please do not hesitate to inform us about any problem, error, or bug you may discover and write an email to our support team support@alliedvisiontec.com.