

AVT Windows SDK Comparison Chart

Feature	PvAPI SDK	FirePackage	Universal Package	Active FirePackage	Direct Stream Package
Common					
Interface Support					
Short Description	Most powerful SDK for developing applications based on AVT GigE Vision cameras with GenICam-like feature control options. Therewith, new camera features are immediately available with a firmware update. Additionally, this SDK provides multiple platform support. Besides Windows, PvAPI also supports Linux, MAC OS, and the QNX real-time operating system.	This SDK is ideally suited for the development of sophisticated image processing solutions based on AVT 1394 cameras. It enables direct control of the DMA transfer and the FireWire bus including advanced error handling options. Therewith, this SDK is ideally suited to develop high performance applications for multiple cameras.	IIDC/DCAM-like feature control options and a simplified AVT camera Smart Feature access make this SDK an option for a simplified application development based on AVT 1394 cameras. In addition, basic GigE Vision camera control options are available that enable to develop common interface independent applications or where applicable to adapt existing source code written previously for AVT 1394 cameras for AVT GigE Vision cameras.	ActiveX-based application development, including simple image processing functions like color correction, image overlays of graphics and text, real-time histogram and image analysis statistics. This SDK also includes a TWAIN interface for connections to other image processing software.	DirectShow and COM based application development. The provided kernel mode capture source can be used with almost any 3rd-party software solution based on DirectShow.
Max. Performance Level	High	High	Medium	Medium	Low
Feature Control	GenICam-like	DCAM-like	DCAM-like	DCAM-like	DCAM-like
Camera Support					
Marlin	N/A	✓	✓	✓	✓
Oscar	N/A	✓	✓	✓	✓
Guppy	N/A	✓	✓	✓	✓
Guppy PRO	N/A	✓	✓	✓	✓
Pike	N/A	✓	✓	✓	✓
Stingray	N/A	✓	✓	✓	✓
Manta	✓	N/A	Restricted	N/A	N/A
Prosilica GB/GC/GE/GS/GX	✓	N/A	Restricted	N/A	N/A
Windows Operating System Support (32- and/or 64-bit)					
XP	✓	✓	✓	✓ ⁽²³⁾	✓ ⁽²³⁾
Vista	✓	✓	✓	✓ ^(2, 4, 23)	✓ ^(2, 4, 23)
Windows 7	✓	✓	✓	✓ ⁽²⁴⁾	✓
Programming Language Support					
C	✓	✓	✓	✓	N/A
C++	✓	✓	✓	✓	✓
C#	✓	✓	✓	✓	✓
VB	(✓) ⁽¹⁾	N/A	(✓) ⁽¹⁾	✓	✓
VB.Net	✓	✓	✓	✓	✓
Java	✓	N/A	(✓) ⁽¹³⁾	(✓) ⁽⁹⁾	N/A
Delphi	✓	N/A	(✓) ⁽¹⁰⁾	✓	✓
Package Components					
Driver	Standard Network Driver or GigE Vision (NDIS) Filter Driver	Monolithic (5) IEEE1394 Bus Driver	Monolithic IEEE1394 Bus Driver and GigE Vision (NDIS) Filter Driver	Camera System Driver (6)	Kernel-Mode Streaming Driver (6,7)
Viewer Application	Simple Demo-Viewer supporting all camera features via XML file	All-embracing demo-viewer to test SmartFeatures of AVT 1394 cameras	Comprehensive demo-viewer to test AVT SmartFeatures	Simple demo-viewer, no SmartFeature support (yet!)	Simple demo-viewer supporting several SmartFeatures
ActiveX Control	N/A	N/A	N/A	✓	N/A
DirectShow Interface	N/A	N/A	N/A	N/A ⁽⁸⁾	✓
TWAIN	N/A	N/A	N/A	✓	N/A
Example Collection	✓	✓	✓	✓	✓
Documentation	PDF file CHM (HTML based help) file	PDF file	PDF file CHM (HTML based help) file	PDF file CHM (HTML based help) file	PDF file CHM (HTML based help) file
AVT SmartFeature Access					
Direct Register Access	✓	✓	✓	✓	✓
Block Transfer	✓	✓	✓	✓	✓
Special Methods	N/A	N/A	✓	N/A	(✓)
AVT SmartFeature Support					
Multi-shot	✓	✓	✓	N/A	(✓)
Secure Image Signature - SIS (Stingray, Pike & Marlin only)	N/A	(✓)	✓	(✓)	(✓)
Sequence Mode (Stingray, Pike & Marlin only)	N/A	(✓)	(✓)	(✓) ⁽¹⁵⁾	(✓) ⁽¹⁵⁾
High Dynamic Range Mode ⁽¹²⁾ (HDR-Mode)	N/A	(✓)	✓	(✓)	✓
High Signal Noise Ratio Mode (High SNR Mode)	N/A	(✓)	✓	(✓)	✓
Dark Signal Non-Uniformity Correction (Marlin F-131B)	N/A	(✓)	✓	(✓)	✓
Blemish Correction (Marlin F-131B)	N/A	(✓)	✓	(✓)	✓
Deferred Image Transport / Stream Hold**	✓	(✓)	(✓)	(✓)	✓ ⁽¹⁴⁾
Triggered Image Acquisition	✓	✓	✓	✓	✓
Trigger Delay Control	✓	✓	✓	✓	✓
Delayed Integration Enable	✓	(✓)	✓	(✓)	✓
Communication via Serial I/O (RS232)	✓	(✓)	✓	✓	(✓)
Configuration of I/O Pins	✓	(✓)	✓	(✓)	✓
Auto Function ADI Control	✓	(✓)	✓	(✓)	✓
Whitebalance Control	✓	(✓)	✓	✓	✓
CMYK Whitebalance Control (Guppy F-038 and -044 only)	N/A	(✓)	✓	(✓)	(✓)
Mirror (ReverseX/ReverseY)	N/A	(✓)	✓	(✓)	(✓)
Auto Max. Bus Speed Detection	✓ ⁽¹⁸⁾	(✓)	✓	✓	✓
Software Reset	✓ ⁽¹⁹⁾	(✓)	✓	(✓)	✓
Advanced Parameter Transfer (Stingray & Pike only)	N/A	(✓)	✓	(✓)	(✓) ⁽¹⁶⁾
Packed 12-bit Mode Support (Pike & Stingray only)	✓	(✓)	✓	✓	✓
Anti-smear Mode (Pike only)	N/A	(✓)	✓	(✓)	(✓)
Defect Pixel Correction ⁽¹⁷⁾	✓	(✓)	✓	(✓)	(✓)
Usage of Look-Up Tables	✓	(✓)	✓ ⁽²⁵⁾	(✓)	✓ ⁽¹⁷⁾
Shading Correction Control (inside the camera)	N/A	(✓)	✓	(✓)	✓
Load/Save User-Sets from/to camera internal memory	✓	(✓)	✓	✓	(✓)
Load/Save User-Sets as XML Config File (externally from/to hard drive)	✓ ⁽²⁰⁾	(✓)	✓	N/A	N/A
Miscellaneous					
Supported 'Save Image' Formats (on PC)	TIFF, BMP	BMP, JPG, GIF, PNG, TIFF ⁽²²⁾	BMP, JPG, GIF, PNG, TIFF, AVI ⁽²¹⁾	BMP, JPG, TIFF, AVI	AVI
Overlay Images (on PC)	N/A	N/A	N/A	✓	N/A
Image Manipulation & Analysis (on PC)	N/A	N/A	N/A	✓	N/A
Video Compression (on PC)	N/A	N/A	N/A	✓	N/A
Histogram Handling (on PC)	N/A	(✓) ⁽²²⁾	(✓) ⁽²¹⁾	✓	N/A

Legend
 ✓ Feature accessible via special API function
 (✓) Feature accessible only via Direct Register Access (no special API function available) or special software tool
 N/A Feature not accessible or AVT does not recommend to use the corresponding package

* Generally only supported by AVT 1394 cameras
 ** Generally only supported by AVT GigE Vision cameras

(1) via DLL function calls
 (2) Currently the Microsoft 1394 OHCI bus driver supports only data rates up to 400Mbps (S400)
 (3) Sample wrapper provided
 (4) When combined with the bus driver of the AVT 1394 Bus Driver Package also S800 (800Mbps) data rates are supported.
 (5) Only one driver handles the physical interface (IEEE1394 bus) and it only communicates to IIDC cameras - a robust and deterministic solution.
 (6) Based on the Microsoft IEEE1394 driver set
 (7) The usage of bandwidth affecting SmartFeatures (i.e., SequenceMode, Deferred Mode) is restricted due to limitations caused by DirectShow itself.
 (8) Since Active FirePackage v3.0 DirectShow is no longer officially supported. As an alternative we recommend to use the AVT Direct StreamPackage.
 (9) Requires bridge between Java and COM/ActiveX, for example JACOB
 (10) Delphi Prism 2010
 (11) Only supported by GigE Sample Viewer application
 (12) Marlin F-131, Guppy F-036 and Pike cameras with Kodak sensor only.
 (13) Guppy & Guppy PRO F-503, Pike F-1100 & F-1600 and Stingray series only
 (14) The usage and performance of this mode is restricted under DirectShow, because of the fixed bandwidth reservation.
 (15) Without format changes
 (16) Encapsulated Update, no list update
 (17) Slow data transmission only
 (18) Detects largest packet size supported
 (19) Reset timestamp in GigE
 (20) Save and load from text file
 (21) Only supported by UniCam viewer application
 (22) Only supported by AVT SmartView application
 (23) 64-bit version not support
 (24) 32-bit API available only
 (25) Single Luminance LUT only