



Overview

The FlashPoint 3D SDK (Software Developers Kit) provides a high-level application programming interface (API) for accessing the features of the FlashPoint 3D VGA board. Using the SDK, a developer can display, control and capture video in a custom application with little or no knowledge of the underlying hardware.

Hardware control is accomplished by a set of libraries provided as DLLs for Microsoft Windows users. The API is identical between Windows 95, 98, and NT. This consistency allows for easy cross development and porting of applications acrossed a variety of operating systems.

Example code and prototype files are included for C/C++ and Visual BASIC, although the DLLs can be utilized by any language that supports the DLL calling interface. The board can also be controlled by any application which supports MCI command strings, Video for Windows capture devices or the TWAIN acquisition interface.

Captured images can be saved or loaded in BMP (DIB), TGA, JPEG, YUV and TIF formats. BMP and TGA support is included as part of the main FlashPoint 3D library. JPEG, YUV and TIF support are provided as separate libraries within the SDK. This allows developers who don't wish to support JPG or TIF to save disk and/or executable space by not linking with the additional libraries. Transparent support is also provided for additional, developer supplied file formats. A developer who wishes to support custom graphic file formats may write additional libraries using a simple graphic file interface. The developer supplied library is then linked or included as an additional DLL and will be called by the FlashPoint 3D libraries whenever a file of the specified format is processed.

The true value of the FlashPoint 3D libraries lies in their ease of use. An application needs to make only four simple calls to display a video window. They are:

```
FPV_Init()          /* Init the FlashPoint 3D */
FPV_SetVideoConfig() /* Specify video source, standard and type */
FPV_SetVideoWindow() /* Specify video location */
FPV_VideoLive()     /* Enable video */
```

Of course, the library provides a much richer interface with far greater functionality, but these four routines are the start of each FlashPoint 3D application.

FlashPoint 3D SDK Summary

- Windows 95, 98, and NT display drivers
- Windows 95, 98, and NT DLLs
- Windows MCI (16/32 bit) and Video for Windows (AVI) drivers
- Full DirectX Compatibility
- Visual Basic support
- TWAIN driver (16/32 bit)
- Sample applications and source code
- FPG video capture application for Windows 95, 98, and NT
- Media Cybernetics Image-Pro Plus driver (16/32 bit)
- Optimus 6.2 driver

FlashPoint 3D SDK components:

FlashPoint 3D VGA Windows display drivers

These drivers are used to provide a 8-, 16-, or 32-bit Windows desktop.

FlashPoint 3D FPG™ Capture Application

FPG is a Windows based application designed to control all aspects of the FlashPoint 3D PCI and AGP videographic boards. Using standard Windows interface menus and commands, FPG provides the following features: Display live video in a resizable video window; Select the video input source -- Composite, S-Video, or RS-170; Select video standard -- NTSC or PAL; Adjust video input levels; Flash grab control; Save file in TIFF, BMP, JPEG, YUV or TGA; and Print captured images to any Windows print device. Source code is included for FPG under Windows 95/98 and Windows NT.

FlashPoint 3D MCI overlay driver

This driver is used to provide video overlay capabilities to Windows applications that can communicate with a hardware device via the Microsoft MCI protocol.

FlashPoint 3D TWAIN driver

This driver is used to capture images from within Windows applications that support the TWAIN interface.

FlashPoint 3D Windows Developer Tools

The Windows developer tools consist of the FlashPoint 3D DLL and import libraries along with the necessary .h files to link and include with your application. Source code for the Windows FPG application and many other samples are included to demonstrate library usage of specific features under Windows. Features included in the source code examples are...

- Video-in-a-Window Control
- Progressive Scan Support
- Camera Integration Control
- Chroma and Color Key
- Triple Buffering Support

Also included are the import libraries and DLLs needed to support JPEG, YUV and TIF load and save.

FlashPoint^{3D} Software Developers Kit Functions

AGP & PCI Video Frame Grabbers

Initialization and Shutdown

FPV_Cleanup

FPV_GetVersionInfo

FPV_Init

FPV_Locate

Description

Shuts down FlashPoint 3D VGA in preparation for exiting an application

Return information about the FlashPoint 3D VGA configuration and library version

Initialize FlashPoint 3D VGA to the currently loaded configuration values

Locate the FlashPoint 3D VGA board and determine the correct method of register access

Video

FPV_GetFieldType

FPV_GetLiveStatus

FPV_GetSTVideoAdjustments

FPV_GetVideoAdjustments

FPV_GetVideoRect

FPV_GetVideoSource

FPV_GetVideoStandard

FPV_GetVideoType

FPV_GetXDelay

FPV_GetYDelay

FPV_SetAcqRect

FPV_SetCaptureBuffer

FPV_SetInputOffset

FPV_SetInputWindow

FPV_SetVideoAdjustments

FPV_SetVideoConfig

FPV_SetVideoWindow

FPV_SetXYDelay

FPV_VideoGrab

FPV_VideoLive

FPV_VideoOffscreen

FPV_WaitFieldType

FPV_WaitHSync

FPV_WaitMS

FPV_WaitVSync

Returns the field type currently coming from the input video source

Returns the current video status - TRUE if live

Return brightness, contrast or other adjustments for a particular standard and video type

Return the current setting for brightness, contrast or other adjustments

Return the current acquisition, input (source) or destination rectangles

Returns the currently selected video source

Returns the currently selected video standard - NTSC or PAL

Returns the currently selected video type - COMPOSITE, SVIDEO, or RS-170

Return the current X delay value

Return the current Y delay value

Set XDelay and YDelay along with the video input extents

Sets video capture to a user supplied buffer

Set X and Y offsets into input video to begin capture

Set the input video window for a non-standard video sources

Set brightness, contrast, sharpness, filters and other video adjustments

Set FlashPoint 3D VGA's video input configuration

Sets the size and location of the video window on FlashPoint 3D VGA's display

Set the X and Y video delay values to align the input video capture window

Freeze a video frame with or without flash control

Start or stop incoming video

Set the video capture area to VGA memory past the current display area

Wait for the start of a specified field type

Wait a specified number of video horizontal syncs

Wait the requested number of milliseconds

Wait a specified number of video vertical syncs

File I/O

FPV_ClosePrivateProfileString

FPV_FileResInfo

FPV_GetPrivateProfileString

FPV_LoadFile

FPV_OpenPrivateProfileString

FPV_SaveFile

FPV_WritePrivateProfileString

Close a currently open Windows format INI file

Returns information about the resolution of a file

Read the value for a given section and key from a Windows INI format text file

Load an image file from disk. The file type is determined from the file extension

Open a Windows format INI file for reading or writing

Save an image bitmap from memory to disk. File type is determined from the file extension

Write the value for a given section and key to a Windows INI format text file

VGA

FPV_ConvertPixel

FPV_CopyVGArect

FPV_GetKeyMode

FPV_GetKeyValue

FPV_SetPalette

FPV_SetKeyMode

FPV_SetKeyValue

FPV_SetVGAPixel

FPV_SetVGArect

FPV_ScreenToDIB

Convert a pixel or line of pixels to a new pixel depth

Copy a rectangle of pixel data to or from the VGA frame buffer

Returns the current key mode

Returns the current key value

Set a VGA, Input or Output Palette

Set the overlay to color or chroma keying

Set the color or chroma key value

Sets a pixel in the VGA frame buffer to the specified value

Set a rectangle in the VGA frame buffer to the specified value

Create a DIB from a screen rectangle

Low Level and Register Access

FPV_ClearIRQ

FPV_EnableIRQ

FPV_GetI2CReg

FPV_GetIRQNumber

FPV_GetMiscReg

FPV_SetI2CReg

FPV_SetMiscReg

Clears a pending interrupt at the source and at the PIC

Enables or disables handling of the VGA or video VSYNC interrupt

Directly read a decoder or EEPROM value

Returns the IRQ used by FlashPoint 3D

Read a register in any of several FlashPoint 3D chips

Directly set a decoder or EEPROM value

Set a register on the FlashPoint 3D board

Miscellaneous

FPV_AutoWindow

FPV_AutoWindowInfo

FPV_CheckSwitch

FPV_GetMiscParm

FPV_ReadSerialBytes

FPV_SetIrisLevel

FPV_SetMiscParm

FPV_SetupSerial

FPV_WriteSerialBytes

Allows the library to directly control a specified video window based on DCI messages

Return information about the current state of AutoWindow control

Check the state of the external trip switch

Return a misc. board parameter

Read one or more bytes of data from the on-board serial port

Set the iris level of a connected auto iris camera lens

Set a misc. board parameter

Prepare to read or write bytes through the on-board serial port

Write one or more bytes of data to the on-board serial port