Getting Started

Phantom SDK

June 2011

Software release

This document is based on software and SDK release 705 (version 12.0.705.0).

100 Dey Road
Wayne, NJ 07470 USA
+1.973.696.4500
phantom@visionresearch.com

www.visionresearch.com

Contents

1. Package contents

This package contains the files needed to create applications for the control of the Phantom high speed cameras:

- Header files
  - PhCon.h
  - PhInt.h
  - PhFile.h
  -
- 32-bit and 64-bit static libraries to be added to your link list
  - PhCon.lib
  - PhInt.lib
  - PhFile.lib
  - x64\PhCon.lib
  - x64\PhInt.lib
  - x64\PhFile.lib
  -
- 32-bit and 64-bit binary .dll files
  - win32\PhCon.dll
  - win32\PhInt.dll
  - win32\PhFile.dll
  - win32\PhSig.dll
  - win32\PhSigV.dll
  - x64\PhCon.dll
  - x64\PhInt.dll
  - x64\PhFile.dll
  - x64\PhSig.dll
  - x64\PhSigV.dll

  Please note that all current Phantom .dll files maintain compatibility with previous versions. Moreover, current .dll files can safely be replaced with any newer version you may receive together with a Vision Research product, thus enabling access to newer cameras and newer features.

- PhDemoCPP, a C++ demo application, binaries and source code

- PhDemoCS, a C# demo application, binaries and source code

- Documentation:
  - GettingStarted - this file
  - Phantom SDK Reference Manual - main document for the Phantom SDK functions and data structures
  - PhDemo Developer Guide - help for the example applications
  - Cine File Format - documents the Vision Research proprietary file format

2. Install and Logging

Before installing or using the SDK, you have to install the current release of software for controlling Phantom cameras. This release will provide all the .dll files, drivers and the Phantom software (Pcc.exe or Phantom.exe) needed to access the Phantom cameras.

In principle, only the old Firewire cameras or the cameras and cinestations that use the 10g Ethernet need the install of device drivers; the standard Phantom cameras with Gigabit Ethernet can be controlled from software "installed" by copying the applications and the needed dlls in a folder on your harddisk. The preferred solution is, of course, running the Install CD you got with the cameras.

If you have cameras, please check your system with our applications: the current Pcc or Phantom release. Install the new release from the distribution CD or copy the exe and dlls to a separate directory. If you don't have cameras you can simulate them by calling PhAddSimulatedCamera function in your application or use the simulated camera features in our applications and demos.

The Phantom dlls may produce debugging output to the file PhCon.log in the path specified at PhRegisterClientEx function. You can enable the collection of this data in the Phantom application: Help/About/Logging and those settings will be shared by all applications that use the dlls on that computer. If the application terminates normally you may speedup the application run with logging by checking the option Logging to RAM.

You can enable the logging in your application by calling the function PhSetDllsLogOption.

3. Major changes

This is the first 32 & 64 bit Phantom SDK. It has better support for image processing allowing new functions like crop and resample.

The old Intel ipl library was replaced with the current Intel ipp and it was linked statically and included in PhInt.

Our main application to control cameras is now Pcc.

4. License warning

The current licensing for the Leadtools does not allow to a third party to use their libraries without buying a license from them. In absence of that license, you do not have the right to redistribute their dlls with your application. That can be done without problems since the Phantom dlls are run-time dynamic linked to Leadtools, so the absence of Leadtools library is tolerated.

5. Release notes

5.1. May 2001 - PhSDK553

1. First Release with support for the firewire cameras Phantom v4, v5.

5.2. November 2003 - PhSDK605

1. Support for the Ethernet cameras (v7, 4.2, 5.1)
2. MultiCine functions: PhSetPartitions, PhGetPartitions, PhDeleteCine, PhGetCineStatus, PhGetParams, PhSetParams, PhGetImage, PhGetAuxData
3. NVM functions: PhMemorySize, PhNVMGetStatus, PhNVMErase, PhNVMContRec, PhNVMGetSaveRange, PhNVMSetSaveRange, PhNVMSave, PhNVMRestore
4. Other functions: PhBusReset, PhBlackReference, PhGetCameraOptions, PhSetCameraOptions, PhGetResolutions, PhGetVersion, PhNotifyDeviceChangeCB
5. New Structures: CAMERAOPTIONS, CINESTATUS; IMPARAMS structure changed, new fields were added to ACQUIPARAMS.

5.3. September 2004 - PhSDK607

1. New functions: PhRegisterClientEx, PhCheckNotification, PhGetCineCount, PhNVMSaveClip, direct access to NVM cines; starts at cine number FIRST_FLASH_CINE. New functions to help the LabView interface PhLVRegisterClientEx, PhLVUnregisterClient, PhLVProgress.
2. ACQUIPARAMS – added Frame Rate Profile (FRP… fields)
3. Backward compatibility based on the PhCon header version specified at PhRegisterClientEx.

5.4. January 2007 – PhSDK640

1. New functions: PhAddSimulatedCamera, PhGetI3Info, PhGetCameraErrMsg, PhSaveCameraLog, PhBlackReferenceCI, PhMeasureWB, PhComputeWB, PhGetImageParameters, PhGetBitDepths, PhGetExactFrameRate, PhRecordSpecificCine, PhSetSingleCineParams, PhVideoPlay, PhGetVideoFrNr, PhWriteStgFlash, PhSetDllsLogOption, PhGetDllsLogOption
2. Structures:

ACQUIPARAMS – added Decimation, BitDepth.
IMAGEPARAMS – added VideoSaturation, PedestalR, PedestalG, PedestalB.
CAMERAOPTIONS – added SourceCamSer, SliceNr, SliceCnt, FRPi3Trig, UT, AutoSaveFormat, SourceCamVer, RAMBitDepth, VideoTone, VideoZoom, FormatWidth, FormatHeight

3. New video out modes added (HDTV compatible).
4. This version of the dlls was compiled in Visual Studio 2005.

5.5. August 2009 – PhSDK675

1. New functions: PhGetCameraModel, PhParamsChanged, PhSetCineImageParameters, PhGetCineImageParameters,

PhRestoreCameraStatus, PhGetIgnoredIp, PhAddIgnoredIp, PhRemoveIgnoredIp, PhGetVisibleIp, PhAddVisibleIp, PhRemoveVisibleIp, PhSearchForAllCameras, PhGet, PhSet

2. Structures

ACQUIPARAMS – added CamGainRed, CamGainGreen, CamGainBlue, CamGain, ShutterOff, CFA, CineName, Description
IMPARAMS – added VideoHue
CAMERAOPTIONS – added AutoPlayCnt, OSDDisable, RecToMag, IrigOut

3. This version of the dlls was compiled in Visual Studio 2008.

5.6. June 2011 – PhSDK705 for Windows 32 and 64 bits

1. New functions: PhGetCineImage,PhProcessImage, PhGetCineLive, PhSetUseCase, PhGetUseCase, PhPrintTime, PhSetCineInfo, PhCineGet, PhCineSet.
2. Structures:

ACQUIPARAMS – added FRPShape
CAMERAOPTIONS – added FormatXOffset, FormatYOffset
IH - new structure, an extension of BITMAPINFOHEADER

3. This version of the dlls was compiled in Visual Studio 2008.