

Imagination PXD Series

Guide To
Troubleshooting
Frame Grabber
Installations

Imagination PXD Series Frame Grabbers
PXD1000

Covering all Supported Microsoft Win32 Operating Systems
Windows 98, 98SE, and Me
Windows NT 4.0, 2000, and XP

<u>PROBLEM: COMPUTER LOCKS AT BOOT / REBOOT</u>	3
CASE 1: “LOCKS AT BOOT” DEFINITION	3
CASE 2: “LOCKS AT REBOOT” DEFINITION	3
SOLUTION: DISABLE “PLUG AND PLAY OS” IN THE BIOS	3
SOLUTION: TRY A DIFFERENT PXD SERIES FRAME GRABBER	4
SOLUTION: TRY A DIFFERENT PCI SLOT	4
<u>PROBLEM: CRASH OR “BLUE SCREEN” ON BOOT / REBOOT</u>	5
SOLUTION: DISABLE “PLUG AND PLAY OS” IN THE BIOS	5
SOLUTION: INSTALL THE LATEST DRIVER PACKAGE	5
<u>PROBLEM: NO VIDEO</u>	6
SOLUTION: CHECK CAMERA POWER & VIDEO CONNECTION	6
SOLUTION: CHECK DATA-LINE CONNECTIONS	7
SOLUTION: CHECK EXPOSURE TIME	7
SOLUTION: CHECK CAMERA MODE	7
SOLUTION: CHECK CONTROL LINES	7
<u>ERROR MESSAGE: “. . . LIBRARY NOT LOADED”</u>	8
SOLUTION: MOVE THE DLL OR DLLS	9
SOLUTION: INSTALL OR REINSTALL THE LATEST DRIVER PACKAGE	9
SOLUTION: INSTALL DRIVERS FROM ADMINISTRATOR ACCOUNT	10
SOLUTION: CHECK IRQ ASSIGNMENTS	10
SOLUTION: RESEAT THE PXD SERIES FRAME GRABBER	10
SOLUTION: TRY A DIFFERENT PXD SERIES FRAME GRABBER	10
<u>ERROR MESSAGE: “ALLOCATE FG FAILED”</u>	11
SOLUTION: RUN ONLY ONE APPLICATION AT A TIME	11
SOLUTION: ADD MEMORY	11
<u>ERROR MESSAGE: “ALLOCATE BUFFER FAILED”</u>	12
SOLUTION: ADD MEMORY	12
<u>CONTACT INFORMATION</u>	13

problem: Computer locks at boot / reboot

This problem means that the operating system did not finish its boot process. You cannot use your system. The operating system may be locked, may be stuck in an infinite loop, or may be waiting for something that will never happen. Nonetheless, the result is the same—you were never given control of your machine. The two problems, “locks at boot” and “locks at reboot,” are similar.

CASE 1: “LOCKS AT BOOT” DEFINITION

1. You turned off your computer.
2. You installed a PXD Series frame grabber.
3. You turned on the power to allow the computer to boot.
4. The boot process never completed.

CASE 2: “LOCKS AT REBOOT” DEFINITION

1. You turned off your computer.
2. You installed a PXD Series frame grabber.
3. You turned on the power to allow the computer to boot.
4. The operating system initialized.
5. You loaded the PXD Series drivers.
6. You rebooted.
7. The boot process never completed.

There is an important difference between the two cases. In Case 1, the PXD Series drivers have not been loaded. The most likely cause for Case 1 is a bad board. In Case 2, the drivers have been loaded, which means there are more possible causes.

Try This . . .

SOLUTION: DISABLE “PLUG AND PLAY OS” IN THE BIOS

If you are not sure how to modify the BIOS on your computer, please consult your PC manual or contact your PC vendor.

Most newer motherboards have a BIOS setting entitled “Plug and Play OS.” Setting its value to “NO” can sometimes fix the lock-up problem.

EXPLANATION:

The Imagination PXD Series frame grabbers are NOT “Plug and Play” compatible.

The newer generation of motherboards has a BIOS setting called “Plug and Play OS,” and it is typically set to “YES.” The “YES” setting will never work on Windows NT 4.0, because it is not a “Plug and Play” operating system.

Windows 98 and Windows 2000/XP can also have problems if the “Plug and Play OS” setting is “YES”.

or Try This . . .

SOLUTION: TRY A DIFFERENT PXD SERIES FRAME GRABBER

The PXD Series frame grabber may have been damaged during shipment. If you have another PXD board, try it. Otherwise, contact CyberOptics Semiconductor Technical Support for a RMA number.

or Try This . . .

SOLUTION: TRY A DIFFERENT PCI SLOT

Move the PXD Series frame grabber to another PCI slot—preferably the one closest to the CPU.

problem: Crash or “blue screen” on boot / reboot

The terms “crash” and “blue screen” refer to the same problem on different operating systems. The Windows 9x systems (95, 98, and Me) will “crash.” The Windows NT systems (NT, 2000, XP) will “crash” by displaying a data dump on a “blue screen.”

Try This . . .

SOLUTION: DISABLE “PLUG AND PLAY OS” IN THE BIOS

If you are not sure how to modify the BIOS on your computer, please consult your PC manual or contact your PC vendor.

Most newer motherboards have a BIOS setting entitled “Plug and Play OS.” Setting its value to “NO” can sometimes fix the lock-up problem.

EXPLANATION:

The Imagination PXD Series frame grabbers are NOT “Plug and Play” compatible.

The newer generation of motherboards has a BIOS setting called “Plug and Play OS,” and it is typically set to “YES.” The “YES” setting will never work on either DOS or Windows NT 4.0, because neither of them is a “Plug and Play” operating system.

Windows 98 and Windows 2000/XP can also have problems if the “Plug and Play OS” setting is “YES”.

or Try This . . .

SOLUTION: INSTALL THE LATEST DRIVER PACKAGE

The driver package that is shipped with the PXD Series frame grabber should always be the latest version. However, if you are unsure, or if you did not receive a driver package (CD-ROM), please download the latest package from the Imagination website at:

http://www.imagination.com/dnpages/pxd_files.html

Use the following procedure to delete old driver packages:

1. Run the “PXD Series Uninstall” program.
2. Search your disk for PXD Series files, and delete them.
3. Delete PXD Series registry entries.
4. Reboot.
5. Install the new driver package.

problem: No video

The “no video” problem is best described by the following symptoms:

1. A PXD Series frame grabber has been installed with no problems.
2. Your machine has been rebooted with no problems.
3. You run one of our samples, but you get a black window instead of video.

Try This . . .

SOLUTION: CHECK CAMERA POWER & VIDEO CONNECTION

Disconnect and reconnect the cable between the video output of the camera and the PXD Series frame grabber.

Check the power switch on the camera, and disconnect and reconnect the power cable.

If you’re powering the camera from the 100-pin data connector of the PXD make sure that the white power connector on the PXD board is connected to the computer power supply.

EXPLANATION:

The white power connector on the PXD board is designed to mate up with a standard 4-pin mini-drive connector used on most 3.5" zip/floppy drives. If your computer does not have one of these connectors you can get an adapter cable for a 5.25" to 3.5" drive at most computers stores.

The adapter cable we use is a Belkin 3.5" drive power converter cable number 274933.

The pinout of the 4-pin connector on the PXD is shown in Table 1:

Table 1. Power connector for PXD Series

Pin Number	Wire Color	Power
1	Red	+5 Volts
2	Black	Ground
3	Black	Ground
4	Yellow	+12 volts

or Try This . . .**SOLUTION: CHECK DATA-LINE CONNECTIONS**

Verify that the data and control lines are connected correctly on the cable. Control lines HDV and LDV must always be connected for all cameras. Control line CAMCLK, pixel clock, must be connected to pins 65 and 15 if the camera is providing the pixel clock signal to the PXD. If the PXD is providing the pixel clock to drive the camera, then SYNTHCLK must be connected to pins 57 & 7.

or Try This . . .**SOLUTION: CHECK EXPOSURE TIME**

Verify the exposure time specified in the configuration file. If the exposure time is too short for the available light, that will cause a dark or black image.

or Try This . . .**SOLUTION: CHECK CAMERA MODE**

Verify that the camera is actually in the same mode specified in the configuration file.

or Try This . . .**SOLUTION: CHECK CONTROL LINES**

Some cameras have control lines that must be set before any video data can be generated. If you have one of these cameras, you may need to connect CTRL0 (pins 54 & 4), CTRL1 (pins 53 & 3), or CTRL2 (pins 52 & 2) to your camera's control lines. In addition to physically connecting the control lines, you also need to make sure the configuration file is setting those lines to the correct values (see Page 42 in the PXD1000 Digital Frame Grabber User's Guide).

error message: “. . . Library not Loaded”

If our sample programs detect problems, they can display either of two different error messages depending on the problem. Figure 1 lists the error messages and identifies the sample programs that can display them. If you encounter either of the error messages in Figure 1, you should begin trying the solutions that follow in the order they are presented. Moving the DLLs usually solves the problem.

<p>Error message: “Frame Grabber Library not Loaded” Error message: “Frame Library not Loaded”</p> <p>Associated sample programs:</p> <ol style="list-style-type: none">1. CAPTURE12. DISPLAY3. DLGSAMP4. FIRESTRO5. GRABCONT6. GRABQ7. GRABTRIG8. GRBTMOUT9. PXDWRBMP10. TRIGSTRO

Figure 1. Listing of all library error messages

Try This . . .

SOLUTION: MOVE THE DLL OR DLLS

Table 2 lists all of the PXD Series DLLs for each Windows operating system. Find the DLLs using the SEARCH method on the EXPLORER. Then copy all of them to the Windows directory listed in the “Copy To” column.

Table 2. PXD Series DLLs per operating system

Operating System	DLL Name	Copy To
Windows 95 / 98 / Me	PXD_32.DLL FRAME_32.DLL	C:\WINDOWS\SYSTEM
Windows NT / 2000	PXD_32.DLL FRAME_32.DLL	C:\WINNT
Windows XP	PXD_32.DLL FRAME_32.DLL	C:\WINDOWS

EXPLANATION OF DLLS:

PXD_32.DLL

This DLL contains all of the frame grabber API commands for Win32 operating systems.

FRAME_32.DLL

This DLL contains all frame-related API commands for all Win32 operating systems.

or Try This . . .

SOLUTION: INSTALL OR REINSTALL THE LATEST DRIVER PACKAGE

The driver package that is shipped with the PXD Series frame grabber should always be the latest version. However, if you are unsure, or if you did not receive a driver package (CD-ROM disc), please download the latest package from the Imagination website at:

http://www.imagination.com/dnpages/pxd_files.html

Use the following procedure to delete old driver packages.

1. Run the “PXD Series Uninstall” program.

2. Search your disk for PXD Series files, and delete them.
3. Delete PXD Series registry entries.
4. Reboot.
5. Install the new driver package.

or Try This . . .

SOLUTION: INSTALL DRIVERS FROM ADMINISTRATOR ACCOUNT

This solution applies only to Windows NT, 2000, and XP. The driver package **MUST** be installed from an account with “Administrator” privileges or from the “Administrator” account.

or Try This . . .

SOLUTION: CHECK IRQ ASSIGNMENTS

IRQ assignments are made by the BIOS at boot time. There is no way to control the IRQ assigned to a PXD Series frame grabber. However, there are two items that should be checked.

1. Make sure that no ISA device is using the same IRQ as a PCI device, especially a PXD Series frame grabber.
2. Make sure that the PXD Series frame grabber is not sharing an IRQ with another PCI device.

EXPLANATION:

The drivers for the PXD Series frame grabbers are capable of sharing an IRQ with another PCI device. However, not all PCI devices are programmed to be “friendly.” If you are seeing the “. . . library not loaded” error, and none of the other solutions has worked, try putting the PXD on its own interrupt or removing other PCI devices.

or Try This . . .

SOLUTION: RESEAT THE PXD SERIES FRAME GRABBER

Remove the PXD Series frame grabber from its PCI slot and reinstall it.

or Try This . . .

SOLUTION: TRY A DIFFERENT PXD SERIES FRAME GRABBER

The PXD Series frame grabber may have been damaged during shipment. If you have another PXD board, try it. Otherwise, contact CyberOptics Semiconductor technical support for a RMA number.

error message: “Allocate FG Failed”

The “Allocate FG failed” error message is generated by one of the PXD Series sample programs listed in Table 3.

Table 3. Complete list of PXD sample programs

CAPTURE1	DISPLAY
DLGSAMP	FIRESTRO
GRABCONT	GRABQ
GRABTRIG	GRBTMOUT
PXDWRBMP	TRIGSTRO

Try This . . .

SOLUTION: RUN ONLY ONE APPLICATION AT A TIME

This error means that the sample program cannot allocate a PXD Series frame grabber. Only one program can use a PXD Series frame grabber at a time. If two programs are run at once, the second program will generate this error.

or Try This:

SOLUTION: ADD MEMORY

This error means that the sample program cannot allocate a PXD Series frame grabber. Allocating a frame grabber requires only a small amount of memory. However, if a system is already tight on memory, this allocation may be enough to generate an error. It is highly unlikely that any Windows operating system could be this tight on memory.

error message: “Allocate buffer failed”

This error is very unlikely on a Windows system but would be generated by one of the PXD Series samples listed in Table 4.

Table 4. Complete list of PXD sample programs

CAPTURE1	DISPLAY
DLGSAMP	FIRESTRO
GRABCONT	GRABQ
GRABTRIG	GRBTMOUT
PXDWRBMP	TRIGSTRO

Try This . . .

SOLUTION: ADD MEMORY

“Allocate buffer failed” means that the sample program cannot allocate enough memory for a frame buffer. The amount needed is the product of image width, height, and pixel depth. If you see this message on a Windows system, it probably means there is not even enough memory for the operating system, let alone a PXD1000. The solution is to add memory. For example, you might see this error on a Windows 2000 system with less than 32 MB of RAM.

Contact Information

For additional information or free technical support on all Imagination frame grabbers, please CyberOptics Semiconductor.

Website: <http://www.imagination.com>
E-mail: CSsupport@cyberoptics.com
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