



Imagination PXC Series

Guide To
Troubleshooting
Frame Grabber
Installations

Imagination PXC Series Frame Grabbers
PXC200L, PXC200F, PXC200AL & PXC200AF

Covering all Microsoft Win32 Operating Systems
Windows 95, 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 PXC 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 (BLUE DISPLAY WINDOW)</u>	6
SOLUTION: CHECK CAMERA POWER & VIDEO CONNECTION	6
<u>PROBLEM: NO VIDEO (BLACK SCREEN)</u>	7
SOLUTION: CHECK THE CAMERA APERTURE	7
SOLUTION: CHECK THE LIGHTING	7
SOLUTION: CHECK “BUS MASTERING”	7
<u>ERROR MESSAGE: DLL-LOADING ERROR MESSAGES</u>	8
SOLUTION: MOVE THE DLL OR DLLS	9
SOLUTION: EDIT YOUR PATH VARIABLE	10
SOLUTION: INSTALL OR REINSTALL THE LATEST DRIVER PACKAGE	10
SOLUTION: INSTALL DRIVERS FROM ADMINISTRATOR ACCOUNT	10
SOLUTION: CHECK IRQ ASSIGNMENTS	11
SOLUTION: RESEAT THE PXC SERIES FRAME GRABBER.	11
SOLUTION: TRY A DIFFERENT PXC SERIES FRAME GRABBER	11
<u>ERROR MESSAGE: “ALLOCATE FG FAILED”</u>	12
SOLUTION: RUN ONLY ONE APPLICATION AT A TIME	12
SOLUTION: ON A WINDOWS OPERATING SYSTEM, ADD MEMORY	12
<u>ERROR MESSAGE: “ALLOCATE BUFFER FAILED”</u>	13
SOLUTION: ON A WINDOWS SYSTEM, ADD MEMORY	13
SOLUTION: ON A DOS SYSTEM, REMOVE TSRs	13
<u>CONTACT INFORMATION</u>	14

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 PXC 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 PXC Series frame grabber.
3. You turned on the power to allow the computer to boot.
4. The operating system initialized.
5. You loaded the PXC Series drivers.
6. You rebooted.
7. The boot process never completed.

There is an important difference between the two cases. In Case 1, the PXC 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 PXC 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: TRY A DIFFERENT PXC SERIES FRAME GRABBER

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

or Try This . . .

SOLUTION: TRY A DIFFERENT PCI SLOT

Move the PXC 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 PXC 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 PXC Series frame grabber should always be the latest version. However, if you are unsure, or if you did not receive a driver package (floppy disk set), please download the latest package from the Imagination website at:

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

Use the following procedure to delete old driver packages:

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

problem: No video (blue display window)

The “no video” problem is a result of the following sequence of actions:

1. A PXC 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 blue 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 PXC 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 26-pin D sub connector of the PXC make sure that the white power connector on the PXC board is connected to the computer power supply.

EXPLANATION:

The white power connector on the PXC 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 PXC is shown in Table 1:

Table 1. Power connector for PXC Series

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

problem: No video (black screen)

The problem listed here as “no video” has the following symptoms.

1. A PXC 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 THE CAMERA APERTURE

Verify that the camera’s aperture is open

or Try This

SOLUTION: CHECK THE LIGHTING

Verify that the object being viewed has adequate lighting for the camera to acquire images.

or Try This

SOLUTION: CHECK “BUS MASTERING”

All PXC Series frame grabbers are “bus masters.” That means they have to take control of the PCI bus when they start a video transfer to PC memory. Some computers have PCI slots that are not capable of “bus mastering.”

Make sure the PXC Series frame grabber is plugged into a slot capable of “bus mastering.” You can determine that by contacting your PC vendor or by consulting your PC documentation.

It may be possible to control “bus mastering” through your BIOS. Check your PC documentation for particulars

error message: DLL-loading error messages

If our sample programs detect problems, they can display any of three different error messages depending on the problem and the sample. Figure 1 lists two pairs of error messages and identifies the sample programs that can display them. If you encounter any 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: “couldn’t load pxc DLL” Error message: “couldn’t load frame_32.DLL” Associated sample programs: 1. PXCDRAW1.EXE 2. PXCDRAW2.EXE 3. 4CAM.EXE 4. AUTOSWITCH.EXE 5. SINGLEF.EXE</p> <p>Error message: “Couldn’t find PXC200 DLL or Driver” Error message: “Couldn’t find PXCDD DLL and DirectDraw” Associated sample programs: 1. OCLOCK.EXE 2. LIVE.EXE 3. CROSS.EXE</p>
--

Figure 1. Listing of all DLL-loading error messages and associated samples

Try This . . .

SOLUTION: MOVE THE DLL OR DLLS

Table 2 lists all of the PXC 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. PXC Series DLLs per operating system

Operating System	DLL Name	Copy To
Windows 95 / 98 / Me	PXC_95.DLL	C:\WINDOWS\SYSTEM
	PXC2_95.DLL	
	FRAME_32.DLL	
	PXCDD.DLL	
	VIDEO_32.DLL	
Windows NT / 2000	PXC_NT.DLL	C:\WINNT
	PXC2_NT.DLL	
	FRAME_32.DLL	
	PXCDD.DLL	
	VIDEO_32.DLL	
Windows XP	PXC_NT.DLL	C:\WINDOWS
	PXC2_NT.DLL	
	FRAME_32.DLL	
	PXCDD.DLL	
	VIDEO_32.DLL	

EXPLANATION OF DLLS:

PXC 95.DLL or PXC2 95.DLL

These DLLs contain all of the frame grabber API commands for Windows 95 / 98 / Me. Both DLLs are identical, but PXC_95.DLL is the newer name.

PXC NT.DLL or PXC2 NT.DLL

These DLLs contain all of the frame grabber API commands for Windows NT / 2000 / XP. Both DLLs are identical, but PXC_NT.DLL is the newer name.

FRAME 32.DLL

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

PXCDD.DLL

This DLL contains a special, simplified interface to some of the DirectDraw commands. You can either use this DLL as a method of implementing DirectDraw, or you can use the DirectDraw API commands directly.

VIDEO_32.DLL

This a special DLL for use by Visual Basic programs for displaying video.

or Try This . . .**SOLUTION: EDIT YOUR PATH VARIABLE**

By default, the SETUP program installs the DLLs in C:\PXC2\BIN. If you don't want to move the DLLs, then you can edit your PATH variable.

or Try This . . .**SOLUTION: INSTALL OR REINSTALL THE LATEST DRIVER PACKAGE**

The driver package that is shipped with the PXC Series frame grabber should always be the latest version. However, if you are unsure, or if you did not receive a driver package (floppy disk set), please download the latest package from the Imagenation website at:

http://www.imagenation.com/dnpages/pxc_files.html

Use the following procedure to delete old driver packages.

1. Run the "PXC Series Uninstall" program.
2. Search your disk for PXC Series files, and delete them.
3. Delete PXC 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 PXC 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 PXC Series frame grabber.
2. Make sure that the PXC Series frame grabber is not sharing a IRQ with another PCI device.

EXPLANATION:

The drivers for the PXC 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 “couldn’t load pxc DLL” error, and none of the other solutions has worked, try putting the PXC on its own interrupt or removing other PCI devices.

or Try This . . .**SOLUTION: RESEAT THE PXC SERIES FRAME GRABBER**

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

or Try This . . .**SOLUTION: TRY A DIFFERENT PXC SERIES FRAME GRABBER**

The PXC Series frame grabber may have been damaged during shipment. If you have another PXC board, try it. Otherwise, if after completing the remaining troubleshooting steps the problem is not resolved, 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 PXC Series sample programs listed in Table 3.

Table 3. Complete list of PXC sample programs

PXCDRAW1.EXE	PXCDRAW2.EXE
4CAM.EXE	OCLOCK.EXE
SINGLEF.EXE	CROSS.EXE
AUTOSWITCH.EXE	LIVE.EXE

Try This . . .

SOLUTION: RUN ONLY ONE APPLICATION AT A TIME

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

Or Try This:

SOLUTION: ON A WINDOWS OPERATING SYSTEM, ADD MEMORY

“Allocate FG Failed” means that the sample program cannot allocate a 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.

error message: “Allocate buffer failed”

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

Table 4. Complete list of PXC sample programs

PXCDRAW1.EXE	PXCDRAW2.EXE
4CAM.EXE	OCLOCK.EXE
SINGLEF.EXE	CROSS.EXE
AUTOSWITCH.EXE	LIVE.EXE

Try This . . .

SOLUTION: ON A WINDOWS SYSTEM, ADD MEMORY

“Allocate buffer failed” means that the sample program cannot allocate enough memory for a frame buffer. The amount needed is between 900k and 1200k. If you see this message on a Windows system, it probably means there is not enough memory for a Windows system. 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.

or Try This . . .

SOLUTION: ON A DOS SYSTEM, REMOVE TSRs

Terminate and Stay Resident (TSR) programs are DOS programs that perform background functions. They consume memory and may cause the “Allocate buffer failed” error message.

To see the TSRs and the total memory usage on a DOS system use the MEM.EXE command as follows:

```
mem /c/p
```

Contact Information

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

Website: <http://www.imagenation.com>
E-mail: CSsupport@cyberoptics.com
Voice: 503.495.2200
Fax: 503.495.2201
Toll free: 800.366.9131