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# Frequently Asked Questions

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**Q: I am unable to capture images and am getting a "PCI FIFO Overflow" error message in XCAP.**

**A:** This error message indicates that the PCI bus or PCI Express bus on the motherboard, or the ExpressCard bus on the laptop, does not have enough bandwidth to transfer the amount of data that the camera is generating. Here are the expansion buses PIXCI® frame grabbers are designed for and their typical maximum bandwidth limits:

32 bit PCI - 110 MB/s  
64 bit PCI - 400 MB/s  
PCI Express x1 - 200 MB/s  
PCI Express x4 - 700 MB/s  
ExpressCard 34 for laptops - 200 MB/s  
ExpressCard 54 for laptops - 200 MB/s

Make sure your system is updated and configured correctly:

1. Download and install the very latest BIOS update for your computer. This often solves bandwidth problems, even on brand new systems; there are often performance fixes that are developed after the product has been shipped.
2. Download and install the very latest chipset drivers for your computer.
3. Go into the BIOS and look for an option called "CPU C-State"; if present this feature must be disabled. This feature is designed to reduce power consumption, but adversely affects the performance of the expansion buses.
4. Go into the BIOS and look for an option called "Idle Power Savings", this seems to be an alternate name for "CPU C-State"; if present this feature must be switched from Extended to Normal.
5. Look for other options in the BIOS that may be related to power saving or expansion bus performance, and see if changing them makes any difference. With the number of new motherboard/laptop models and new motherboard/laptop features being developed, there may be settings that affect expansion bus performance that we are not aware of.

To decrease the amount of data that is being passed across the bus, there are a few easy steps that can be taken:

6. Capture a lower bit depth, for example if capturing 12 bit images try capturing 8 bit or 10 bit images instead.
7. If capturing more than 8 bits, try turning on bit packing if the option is available in XCAP's controls. This will decrease the amount of data being passed across the bus, at the cost of a slightly increased load on the computer's CPU.
8. If capturing color video from a PIXCI® SV4, SV5, SV5A, SV5B, or SV5L, select the Res tab in XCAP's Capture & Adjust window. Change the Color Pixel Format to UYVY. This will decrease the amount of data being passed across the bus by 33%, at the cost of a very slightly increased load on the computer's CPU.
9. Try capturing a smaller image resolution, or try running the camera at a slower frame rate.

In case some other devices on the system may be sharing bus bandwidth with the frame grabber, you can also try the following:

10. Close any unnecessary programs that are running on the computer. Their operation may be accessing devices that share bus bandwidth.
11. If using a frame grabber on a PCI bus (32 bit or 64 bit), remove devices that may be installed on the same PCI bus as the frame grabber. You can also move the frame grabber to a PCI slot that is on a different PCI bus. Many motherboards only have one PCI bus, or there may be only one available PCI slot, so this may not be possible.
12. If using a frame grabber on a PCI Express bus, try moving the frame grabber to a different PCI Express slot. Each PCI Express slot is supposed to have independent bandwidth, but we have found that in practice there can be conflicts.

13. Sometimes the display adapter card or the motherboard's on-board display adapter can interfere with PCI Express bus performance. If using a PCI Express display adapter, try switching to the motherboard's on-board video. If using the motherboard's on-board video, try switching to a PCI Express display adapter.

**Q: I am getting a "Driver Not Installed" error message when running XCAP, or Windows does not detect new hardware when I install the frame grabber.**

**A:** Sometimes, an error occurs in either the Windows Registry or in driver-related files that are cached on the hard drive. This can cause problems with the way Windows and XCAP identify the frame grabber and its driver. To correct this problem:

1. Uninstall Driver using XCAP's Driver Uninstall Utility
  - a. Open XCAP.
  - b. Select PIXCI® → PIXCI® Open/Close. Click "Close" if the board is currently open.
  - c. Click "Driver Assistant".
  - d. Select "Uninstall PIXCI® Driver".
  - e. Click "Apply". A message log will pop up in the upper right corner of the screen, informing you that the driver was uninstalled.
  - f. Click "Cancel" and close XCAP.
2. Make sure Driver is no longer detected by Windows
  - a. In Windows select Start → Run (or the Search box at the bottom of the Start menu if using Windows Vista).
  - b. Type in **devmgmt.msc** and hit enter, this will bring up the Device Manager.
  - c. Look for anything labeled "Imaging Devices", "Multimedia Devices", or "Other Devices" that may be the EPIX card.
  - d. Right click on anything that appears to be the EPIX card, and click "Uninstall". If you're unsure of what the hardware is, you can right click on it and select "Properties" to get a description.
  - e. If using Windows Vista, check "Delete the driver software for this device", and click "OK".
  - f. The hardware should then disappear from the list.
3. Install Driver
  - a. Restart the computer.
  - b. The "Found New Hardware Wizard" should pop up.
  - c. Open XCAP.
  - d. Select PIXCI® → PIXCI® Open/Close.
  - e. Click "Driver Assistant".
  - f. Select "Install PIXCI® Driver", and click "Apply".
  - g. Follow instructions presented.

**Q: I am capturing image sequences to memory via "Sequence Capture: Video to Frame Buffers", but I want to be able to capture a longer sequence.**

**A:** Images are captured into frame buffers. You will need to allocate more memory for frame buffers. To do this, open XCAP. Select PIXCI® → PIXCI® Open/Close. Click "Close" if the board is already open. Click "Driver Assistant". Select "Set Frame Buffer Memory Size". Here, you can increase the "Memory Requested for Frame Buffers".

**Windows 2000.** Select Normal allocation when allocating less than 64MB, select Forceful allocation when allocating 64MB or more. Make sure at least 128 MB is left for use by Windows.

**Windows XP 32bit.** With Windows XP 32bit you can go above 64MB using Normal allocation. However, as you approach some point (approximately 768MB depending on the computer) the system will slow down significantly. If you notice the system slowing down when allocating more than 64MB under Windows XP, try using Forceful Allocation. Make sure at least 256 MB is left for use by Windows.

**Windows XP 64bit.** Normal allocation should work for very large amounts of memory. If you notice the system slowing down significantly when allocating most of the memory for frame buffers, try using Forceful allocation. Make sure at least 256 MB is left for use by Windows.

**Windows 7 / Vista 32bit.** With Windows Vista 32bit you can go above 64MB using Normal allocation. However, as you approach some point (approximately 1GB depending on the computer) the system will slow down significantly. If you notice the system slowing down when allocating more than 64MB under Windows 7 / Vista 32bit, try using Forceful Allocation. Make sure at least 512 MB is left for use by Windows.

**Windows 7 / Vista 64bit.** With Windows 7 / Vista 64bit, you will probably need to use Forceful allocation when allocating more than 6GB. If allocating less than 6GB, Normal allocation should work. Make sure at least 512MB is left for use by Windows.

**Q: Every time I run XCAP-Ltd or XCAP-Std, it tells me no hardware key was detected. However, my parallel port or USB key is installed on the computer's parallel port or USB port.**

**A:** Sometimes Windows doesn't correctly identify the hardware key's driver. To fix this problem, first make sure you are logged into Windows with administrator privileges (when using Windows 7 / Vista, you will have to right-click the XCAP shortcut icon and select "Run as Administrator").

Next, use XCAP's utility to uninstall and then install the authorization key's driver:

1. In XCAP, select PIXCI® → PIXCI® Open/Close.
2. Click Close if the board is already open.
3. Click "Driver Assistant".

4. Select “Uninstall Authorization Key Driver”, and click Apply.
5. Select “Install Authorization Key Driver”, and click Apply.
6. Close XCAP.
7. Run XCAP.

If XCAP still cannot see the hardware key, the above procedure must be done manually from a command prompt:

1. Run XCAP.
2. In XCAP, select Utility → Program Setup.
3. Note the “Program Directory” XCAP is installed in, for example it will look something like “C:\Program Files\EPIX\XCAP”.
4. In Windows select Start → Run (or the Search box at the bottom of the Start menu if using Windows 7 / Vista).
5. Type in **C:\Program Files\EPIX\XCAP\hldinst.exe -remove** and hit enter, replacing “C:\Program Files\EPIX\XCAP” with XCAP’s “Program Directory” if necessary.
6. Wait for the utility to finish.
7. Type in **C:\Program Files\EPIX\XCAP\hldinst.exe -install** and hit enter, replacing “C:\Program Files\EPIX\XCAP” with XCAP’s “Program Directory” if necessary.
8. Wait for the utility to finish.
9. Close XCAP.
10. Run XCAP.

Your hardware key should now be detected by XCAP.