COMPUTER SETUP INSTRUCTIONS

Whether you are upgrading or replacing your current dedicated panoramic x-ray machine computer; please follow these steps to ensure a successful transition to your new computer.

Panoramic Technical Support can be reached at 800-654-2027 / support@pancorp.com for any questions.

PANORAMIC DENTAL IMAGING

Computer & Software Setup Instructions

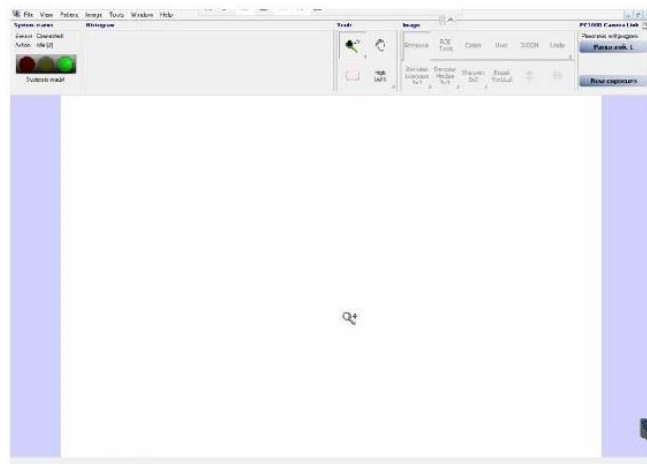for a computer with Windows 10 Professional 64-bit

Used with X-ray Machines:

PC-1000
Digital Upgrade

PC-4000

Pre-Setup – from the existing computer

Backup Calibration Files

Identify capture card

Computer Information

Setup – on the new computer

Verify Computer Operating System & Type

Disable Sleep, Hibernate, & Fast Startup

Install Software - Panoramic Dental Imaging

Install or Configure Drivers for capture card

Verify or Configure Software Settings– Panoramic Dental Imaging

Restore Calibration Files

Adjust Image Appearance

BACKUP CALIBRATION FILES

On the existing computer, backup the ***calib & datastor*** hidden folders:

Required --   C:\ProgramData\Ajat\panoramic\calib\

Optional --   C:\ProgramData\Ajat\panoramic\datastor\

*Note: The datastor folder is used to reload **recent** images taken. It is not used as a long-term backup.*

Alternatively these folder can be accessed from the software under the Tools Menu. If calibration files are not available on the existing computer due to a computer issue/crash, then a new set of calibrations can be created by having an X-ray Technician visit your office. Call Support for details.
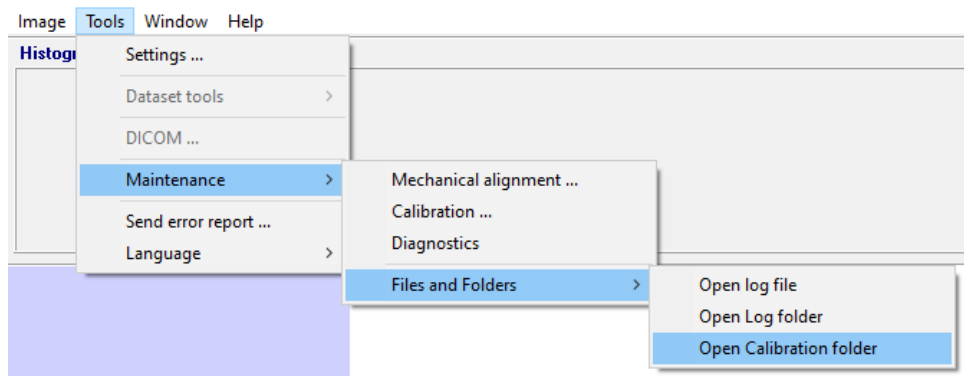
IDENTIFY CAPTURE CARD

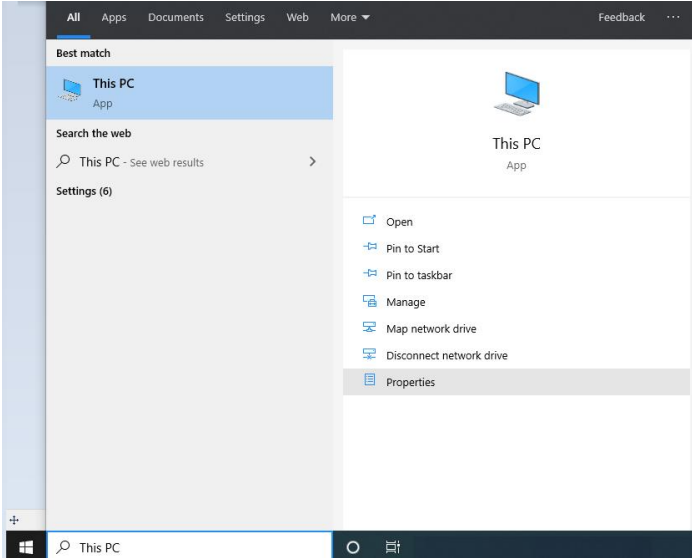| Type	Epix EB1
Expansion Slot	PCI Express x1 or x16 (use x16 slot for Windows 10)
Size	Full or Half Height - call to order different size bracket
Compatible Operating Systems	Windows 7 or 10 32 and 64 bit
Used with Pano Machines	PC-1000 Digital PC-4000

COMPUTER INFORMATION

The PC used must be a Windows desktop tower. Mac computers & Mac OS not supported. Laptops & All-in-One computers will not work because the capture card must be installed in the next computer.
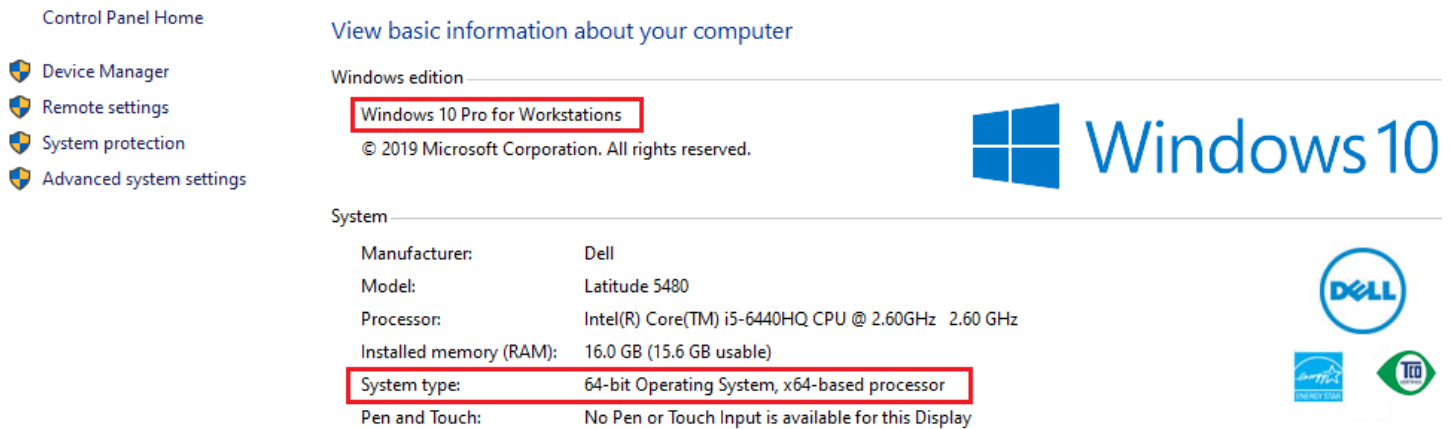
Processor (Intel Brand Required)	i5 6th Generation or later
RAM	8 GB
Hard Drive	500+ GB or greater, 7200 RPM or faster
One Available Expansion slot	PCI-Express x16

VERIFY COMPUTER OPERATING SYSTEM & TYPE

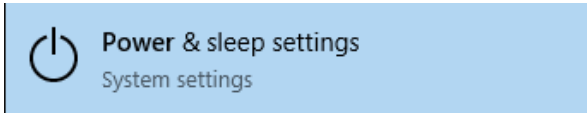From the Start Menu, type "This PC" and click on Properties

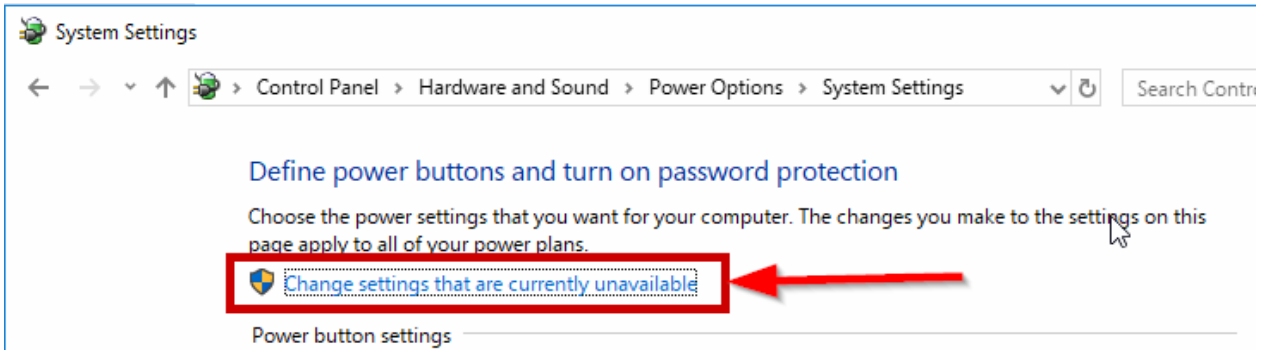An Example is shown. Windows 10 Professional, 64-bit Operating System

DISABLE SLEEP, HIBERNATE, & FAST STARTUP

a. If PC is windows 10, open the start menu and type "power" click on the "Power and sleep settings".

Power & sleep settings
System settings

b. On the right side of the window, under Related settings, click "Additional power settings".
c. On the left side of the window, click "Choose what the power buttons do".
d. Near the top of the window click "Change settings that are currently unavailable".

System Settings

← → ∨ ↑ > Control Panel > Hardware and Sound > Power Options > System Settings   ∨ ↻   Search Contro

Define power buttons and turn on password protection

Choose the power settings that you want for your computer. The changes you make to the settings on this page apply to all of your power plans.

🛡 Change settings that are currently unavailable ⟸

Power button settings

e. Uncheck the boxes.

System Settings

← → ∨ ↑ > Control Panel > Hardware and Sound > Power Options > System Settings   ∨ ↻   Search Con

Define power buttons and turn on password protection

Choose the power settings that you want for your computer. The changes you make to the settings on this page apply to all of your power plans.

Power button settings

When I press the power button: | Shut down   ∨ |

Shutdown settings

☐ **Turn on fast startup (recommended)**
This helps start your PC faster after shutdown. Restart isn't affected. Learn More

☐ **Sleep**
Show in Power menu.

☐ **Hibernate**
Show in Power menu.

☑ **Lock**
Show in account picture menu.

## INSTALL SOFTWARE - PANORAMIC DENTAL IMAGING SOFTWARE

Note: If previously installed, or if this is an upgrade from Windows 7, make sure to uninstall any previous versions of the program, listed as Panoramic Dental Imaging, or formerly called Ajat Dental Imaging.

Download and Run the software Installation. Panoramic Dental Imaging 9.1.2.7600.exe

Use the Default selections by clicking the Next buttons. Here are the screens to show the prompts.
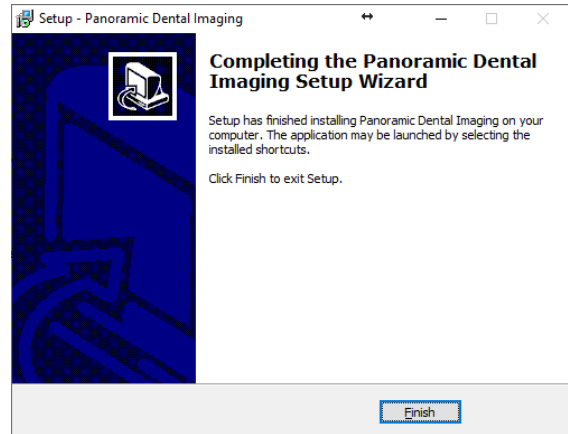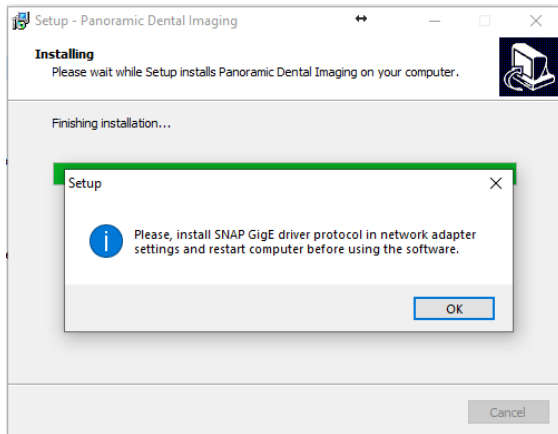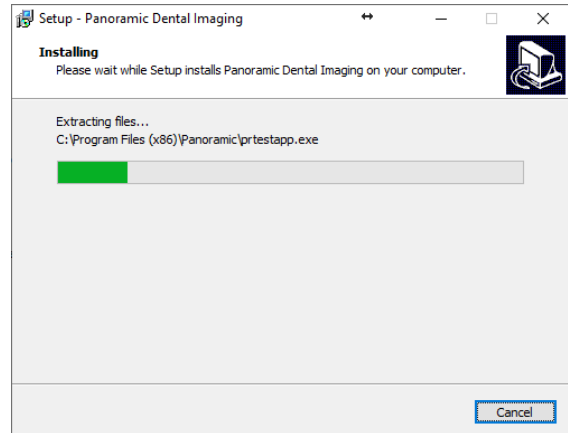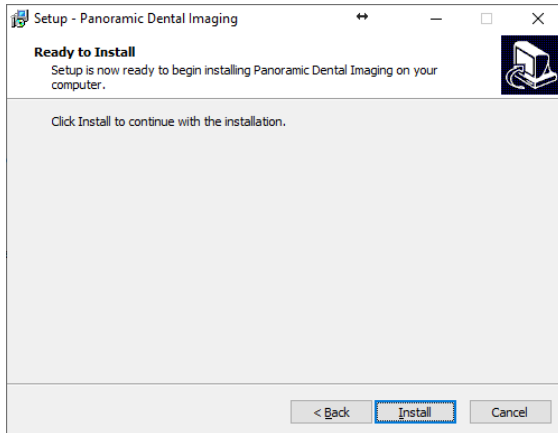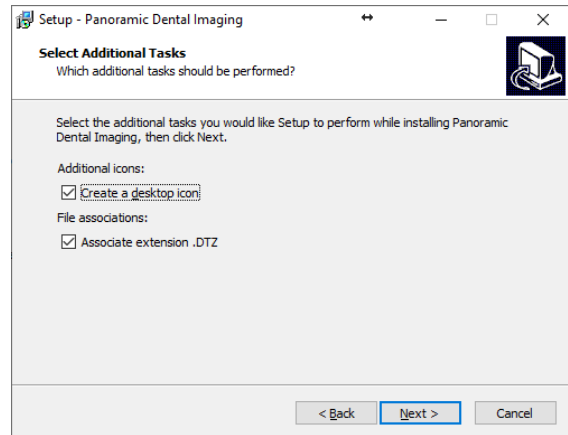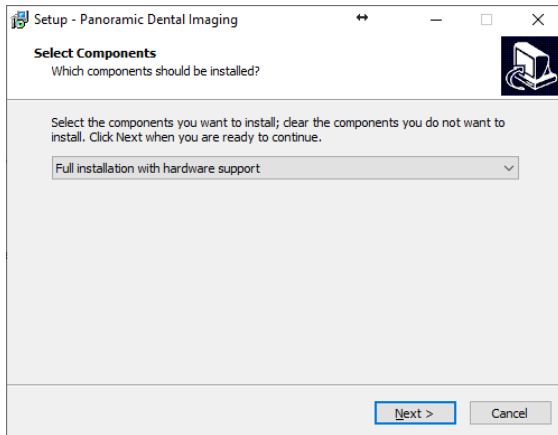
Make sure to use a x16 (4 inch) slot when using the EPIX EB1 card with Windows 10.
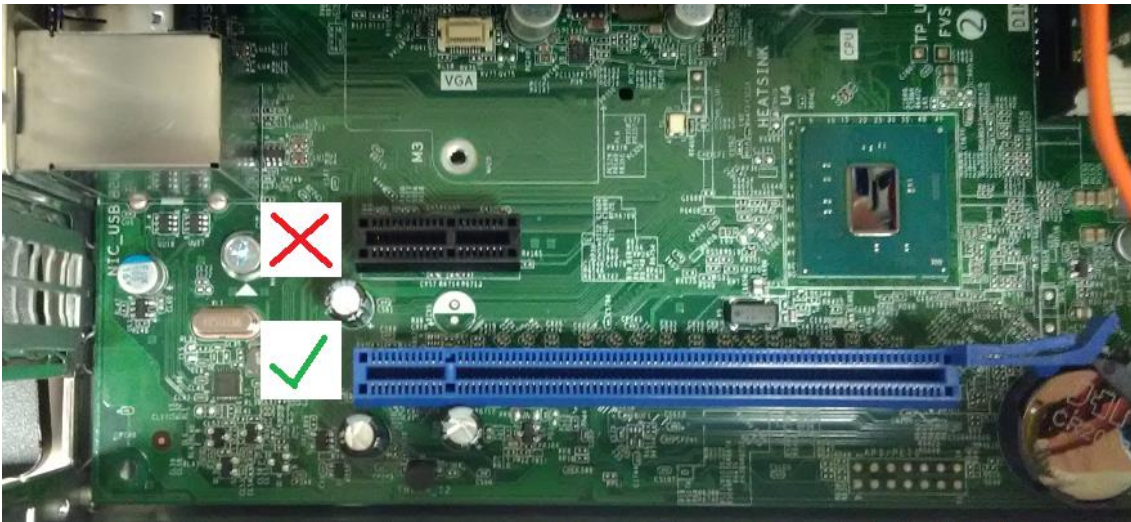

INSTALL EPIX DRIVERS – USE PCI-E X16 SLOT

a. Download the EPIX EB1 Drivers.zip and extract the appropriate drivers for your OS version to your desktop.

b. Open the start menu and search "device manager" and click on the "device manager" result.
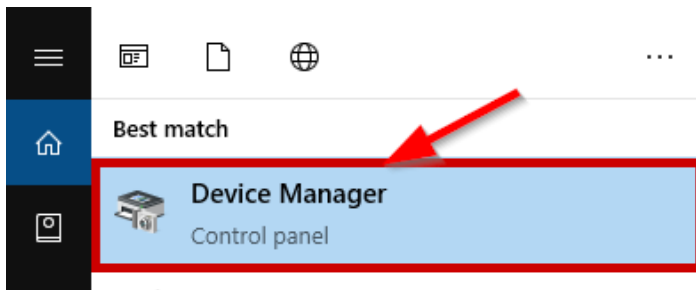
c. In the "other devices" category, there may be a device named "Coprocessor" or "PCI device" Right-click on the device and chose "update driver software".
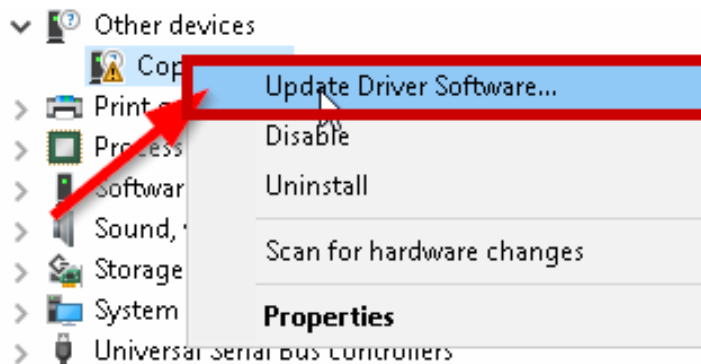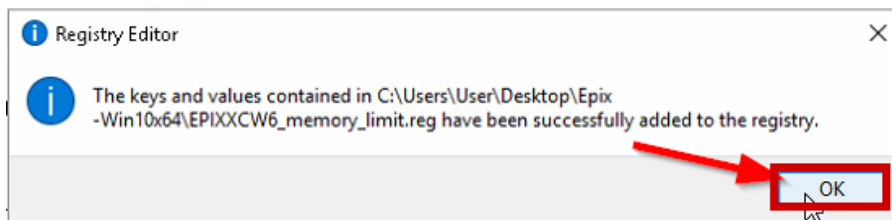
d. Click "browse my computer for driver software".

e. At the top click the "browse" button and navigate to the folder on your desktop and click "ok".
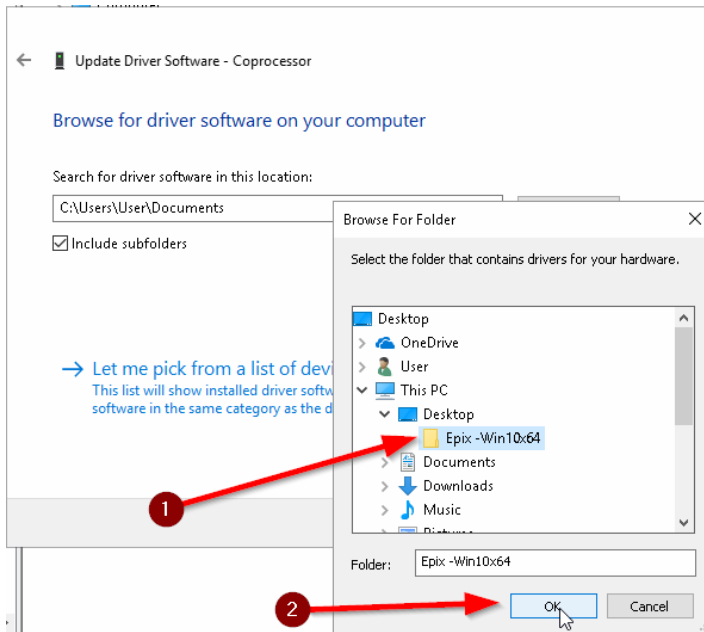
f. Click "next" on the update driver window.

g. If any security box pops up, make sure the "always trust software from "EPIX, inc" is checked and click "install".
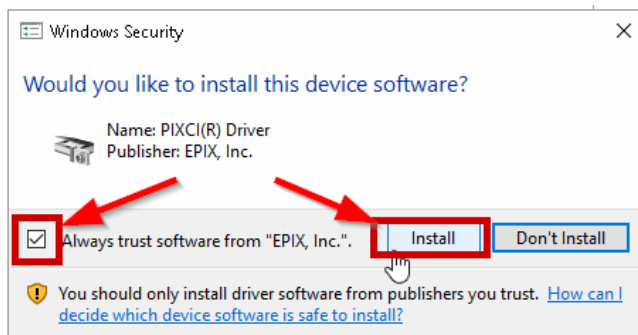
h. After it successfully installs the driver click "close" on the update driver window.

i. If it says you need to reboot the computer to finish installing the device, **click "no"** for now.

j. The capture card should now be under the "imaging devices" category in the device manager.

k. From the drivers folder previously downloaded, double-click on the "EPIXXCW6_memory_limit" file and click "yes" on the window that pops up to merge, and "OK".


Registry Editor   ✕

ⓘ The keys and values contained in C:\Users\User\Desktop\Epix
    -Win10x64\EPIXXCW6_memory_limit.reg have been successfully added to the registry.

                                                    OK

RESTART THE COMPUTER

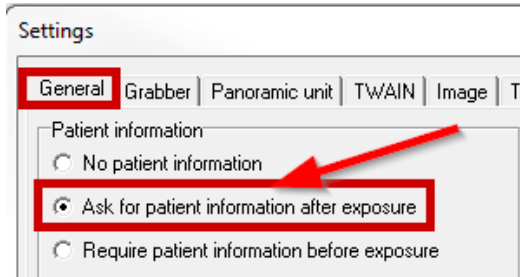## VERIFY OR CONFIGURE THE PANORAMIC DENTAL IMAGING SOFTWARE

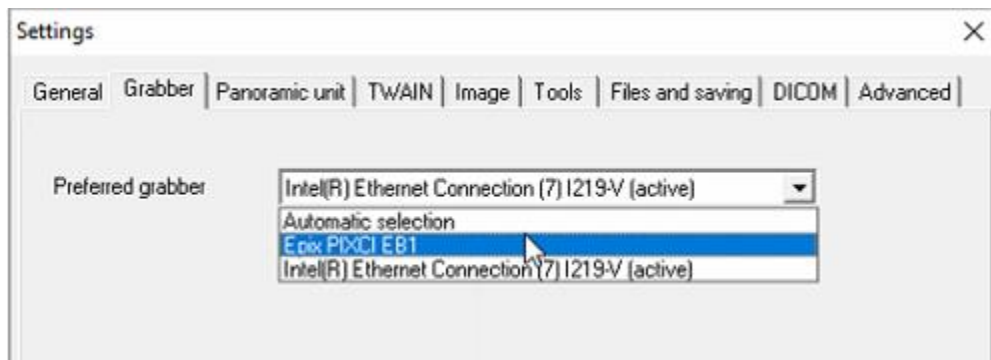   a.   Open the "Panoramic Dental Imaging" software If prompted about Performance optimization click Yes.
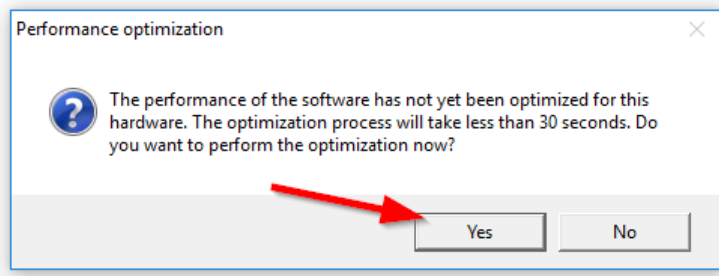
    b.   At the top of the software click "Tools" then "Settings…"
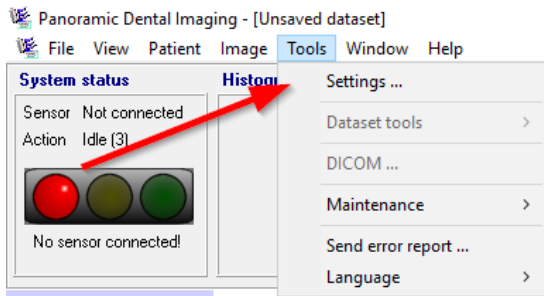
    c.   Click on the "General" tab and select "Ask for patient information after exposure".
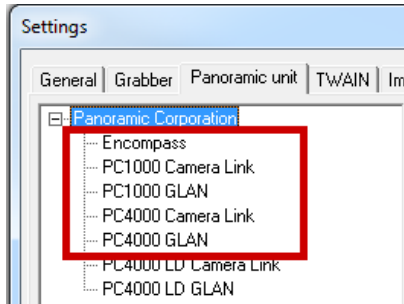

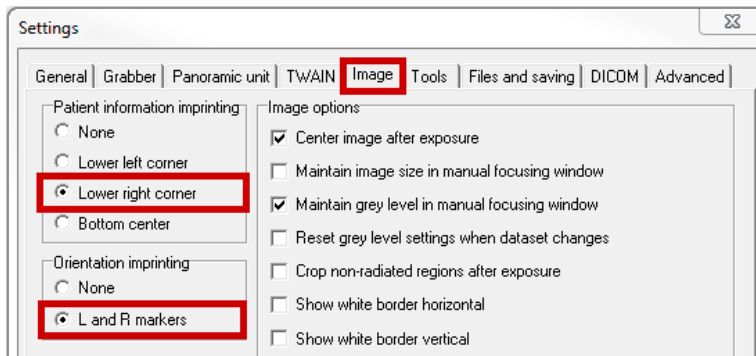   d.   Click on the "Grabber" tab and Ensure the proper preferred grabber is selected (EPIX EB1).

e. Click the "Panoramic unit" tab and chose your type of x-ray machine from the list. If you have the Intel NIC card, chose the GLAN version of the machine.
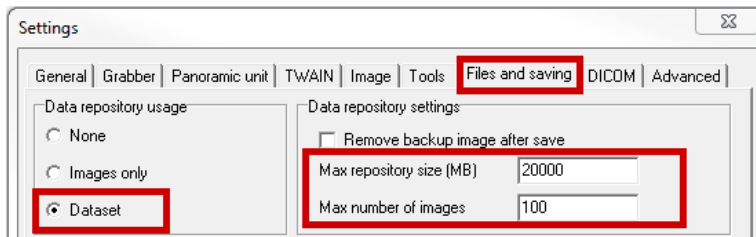
<p align="center">PC1000 CAMERALINK OR PC4000 CAMERALINK</p>

f. Click the "Image tab" and check the options of "Lower right corner" and "L and R markers".

g. Click the "Files and saving" tab, and select "dataset", set the "Max repository size" to "*20000*", and the "Max number of images" to "100" (these numbers can be adjusted to fit computer needs).

h. Click "ok" on the settings windows to save your settings, if prompted to Reboot your PC, click "yes".

RESTORE THE CALIBRATION FILES

  a. The calibration files should have been backed up from the previous computer. Copy all files in that folder to the same location on the new PC.

       C:\ProgramData\Ajat\panoramic\calib\

       C:\ProgramData\Ajat\panoramic\datastor\

    Note: This folder is created automatically after the software has been setup/configured. Make sure to not copy the folder into itself. Example: C:\ProgramData\Ajat\panoramic\calib\calib\   (wrong)

  b. Power the X-ray machine Off, or ensure the sensor is powered off, wait 5 seconds, and power back On.

  c. Verify GREEN CONNECTION status light in the TOP LEFT corner of the software program
    Call Panoramic Support if problematic. 800-654-2027 opt. 1 for the Service Dept.
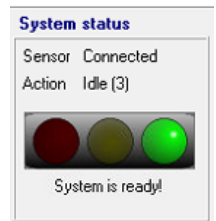
Important Note: If the calibration date is <u>older than 2 years</u>, please contact Technical Support or your Local <u>Certified</u> Technician for recalibration. Panoramic Corporation strongly recommends Recalibration of the X-Ray unit & Software every 2 years. If you cannot see the Date modified column, then you need to change the view of the folder to Details.

ADJUST IMAGE APPEARANCE

a. **Ensure the Software direction L/R (top right of screen) matches the Machine direction L/R (side panel)**
   A green connection to the software/sensor is required to change this button direction

a. Because this is a new computer the images by default will be very light until adjusted. You can follow the instructions listed on page 20 of the *Guide to getting the best images* to adjust the default image adjustments

How to Correct VERY blurry images from using the wrong direction captured

Only for PC1000 & PC4000 units.

Reason for the Problem: The direction of the machine capture did not match the Software. Change the button in the software by clicking on it, or change the machine direction to match.

To Correct the image to avoid a retake: Recover the image by using the Data repository under the File menu. Once the poor image is reloaded, then flip the dataset direction by using the Tools menu.

You may correct the image first if it is still on the screen

Panoramic Dental Imaging - [Unsaved dataset*]

File View Patient Image Tools Window Help

Open image file ...
Open dataset ...
Reopen
Data repository ...
Save image
Save image as ..
Save image as TWAIN
Save dataset
Save dataset as ...
Save dataset and image as ...
Close image
Close dataset
Exit

Settings ...
Dataset tools   >   Flip dataset direction
DICOM ...
Maintenance   >
Send error report ...
Language   >

Data repository
Data
Images and datasets in the repository

Date/time	Saved	Type	ID/Name/Description
2018/08/29 10:22:45	Yes	DTZ	SKULL PHANTOM

Repository usage: 1/50 files, 249/30000 megabytes

Load   Delete

PC4000 GLAN

Image Presets Enhance ROI Tools Colors User DICOM Undo

High Light Boosted Boosted Strong Boosted Equalized Basic Basic Equalized

Panoramic unit program
Panoramic L
New exposure

Overview 56%

Fit XY X Y 1:1

PC-1000

PC-4000

SELECT OPERATION

R   L   SKULL PHANTOM

Helpful hints on making your panoramic images better!

After taking a panoramic x-ray there are two main tools that we prefer everybody use before the image is saved. Those two tools are the Equal Vertical tool and adjusting the Histogram graph.

Equal Vertical tool

Description: The Equal Vertical tools will equalize the columns in the image. This should be the first tool used after taking a panoramic x-ray. For example, the center of the image is generally lighter because of the spinal shadow due to the position of the patient. To help minimize this "shadow" of the spine in the image, using the tool will darken the middle and lighten the sides, balancing the difference in darkness across the image.

The Equal Vertical tool is located under the Enhance button to view the buttons beneath.
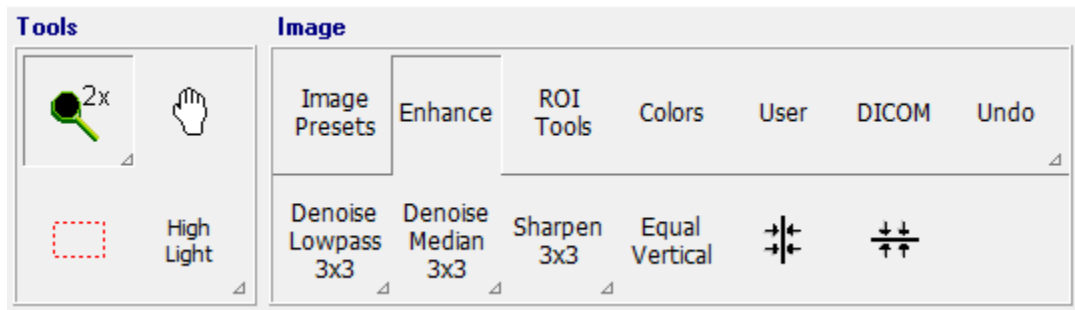
Below is an example when using the Equal Vertical tool.
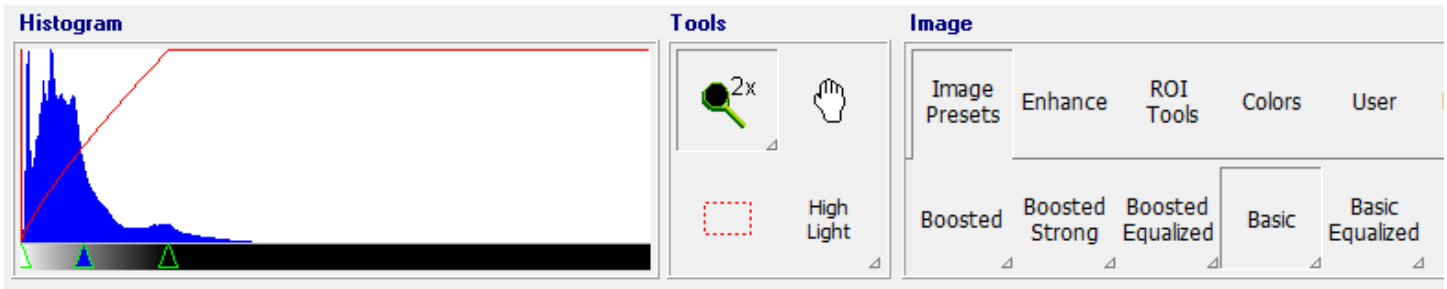
Before the Equal Vertical tool is used:

After the Equal Vertical tool is used:

Adjusting the histogram

After the Equal Vertical tool is used, it is best to adjust the brightness and contrast to get the best detail out of the x-ray. This is the second tool that should be used after taking a panoramic x-ray. This tool is called the Histogram.

As seen in the examples above, there are three small green triangles at the bottom of the tool. Moving these triangles side-to-side will adjust the brightness and contrast values of the image. To move the triangles simply left-click the triangle using the mouse and drag them side to side. When the triangle is in its desired position, release the left-mouse button. Be careful not to overlap the triangles when adjusting them, otherwise the software will not know which triangle to move. To best learn this tool, adjust the triangles and notice the difference in the image after the adjustment. Utilizing this tool can greatly improve the quality of the x-rays.

The farthest right triangle, usually seen as green outline with black in the center, controls the contrast or darkness (dark levels) of the image. The default position for this triangle is against the far right side. This should be the first triangle to be moved.

The middle triangle, usually seen as the green outline with blue center, controls the brightness of the image. The default position for this triangle is right in the center. This is the second triangle to be moved.

The farthest left triangle, usually seen as green outline with white center, controls the whiteness (white levels) of the image. The default position for this triangle is against the far left side. This triangle should normally be ignored and kept in its default position.

Since every individual has a different opinion about getting the best detail with an x-ray, there is no set of rules of how the x-ray should look. Therefore the best way to decide this ask the doctor (or talk amongst the group) and decide what key parts in the x-ray are needed to be in focus and given attention to. The person that will usually take the x-ray needs to be aware of what is needed, otherwise most (if not every) x-ray will not be to the doctor's liking. This is why communication is key when viewing/saving x-rays.

As an example on how to use this Histogram tool, adjust the contrast (most right) triangle from right to left until you start to see "burn out" in the jawbone or skeletal figure. (See below)
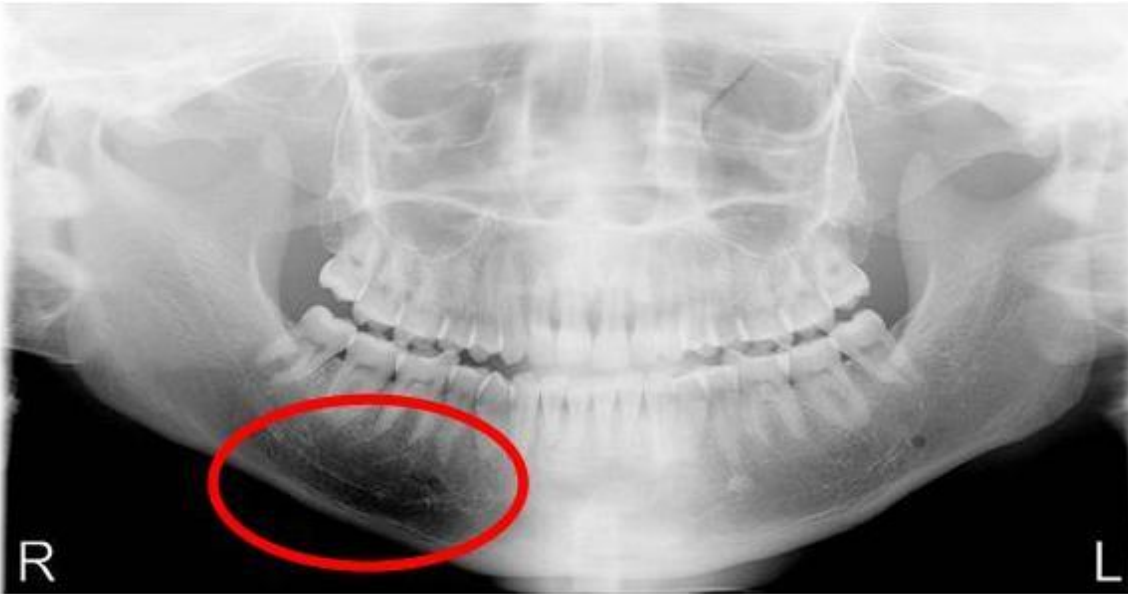

Then adjust the brightness (middle) triangle side-to-side until you get the detail and clarity in the roots of the teeth. Getting the detail desired may require you to re-adjust the contrast and brightness triangles more than once. Do not be afraid to take some time if you feel you can get a better image. If you are unsure ask the doctor or another staff member if the detail you have is acceptable or not. There is no wrong adjustment; it all falls on personal preference.

Note: Patient positioning and correct kvp usage directly reflects the potential detail seen in the image.

Below is an example when using the Histogram (or Image controls) tool.

Before the Histogram tool is used:
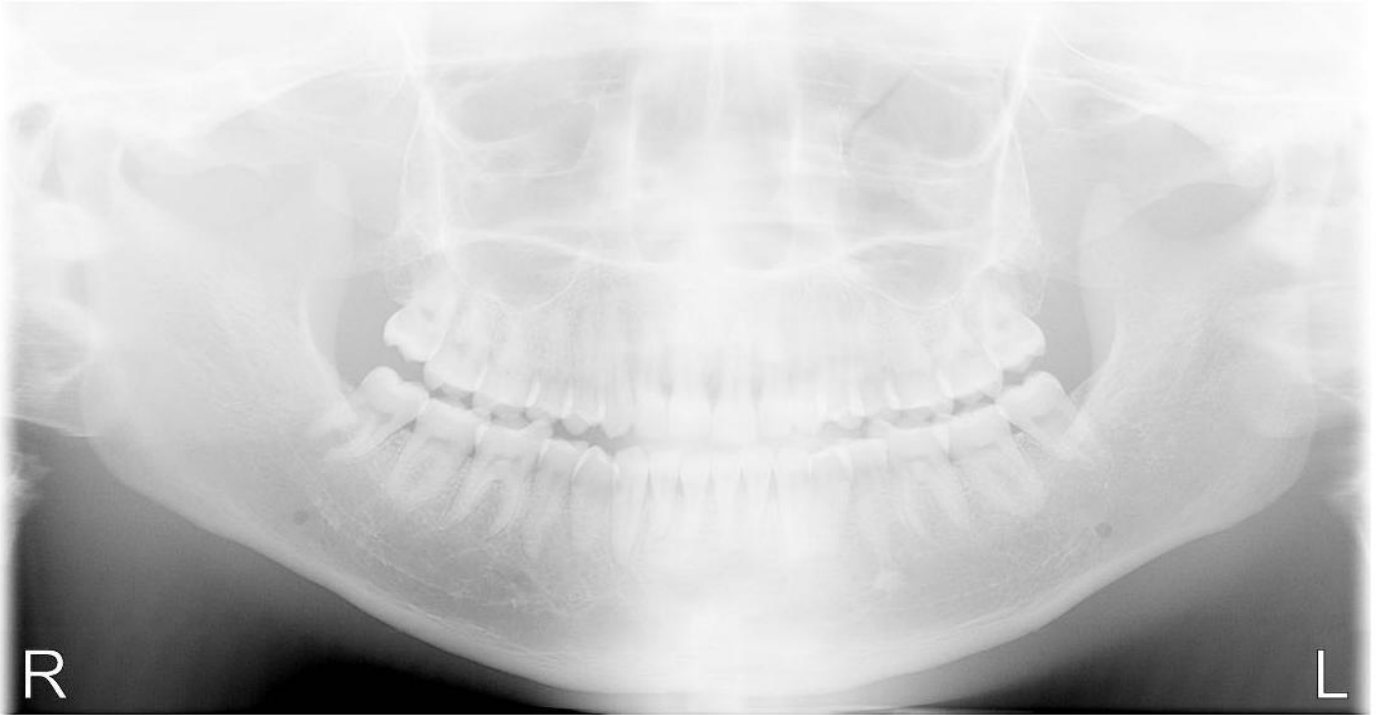
After the Histogram tool is used:

![Panoramic logo]

Troubleshooting Not Connected Status (EPIX)

Estimated Time: 2-20+ minutes

Note: Some instructions reference the steps used above in the installation steps.

These steps will be easier for an IT person to follow having computer experience.

Check Software Diagnostics

Check the software diagnostics for Frame Grabber Information. Under the **Tools** menu from the top, choose **Maintenance**, and then **Diagnostics**.
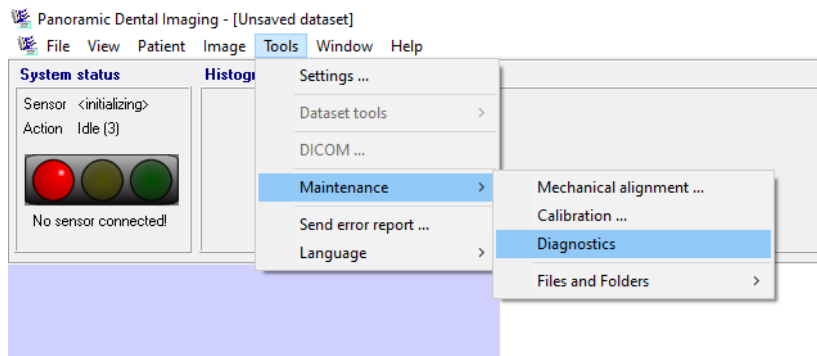
The diagnostics screen shows (below in red) the software version 9.1.2.7600

The Frame grabber Information is where the _Epix PIXCI EB1_ should be listed.

This tells us the software is connected to the interface card. If any other is listed, then go to Grabber settings (Page 25)

To best rule out any software 'hang-ups' or 'freezes', restart the background service process.
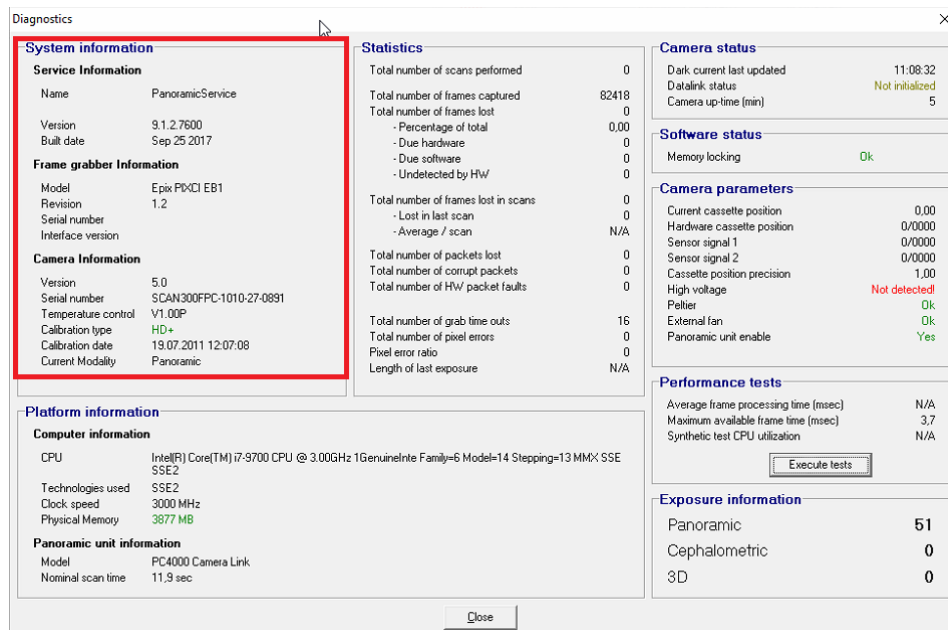
RESTARTING THE BACKGROUND SERVICE

(Important) To restart the background service, first <u>CLOSE</u> the PANORAMIC DENTAL IMAGING Software

Open up the Services list by right-clicking 'This PC' on the desktop and choosing ***Manage***. If this icon is not on the desktop, you can enable this in the control panel/settings > Display/Themes. Or type ***This PC*** from the start menu, and right-click on the *best match* in the list, and click on ***Manage***
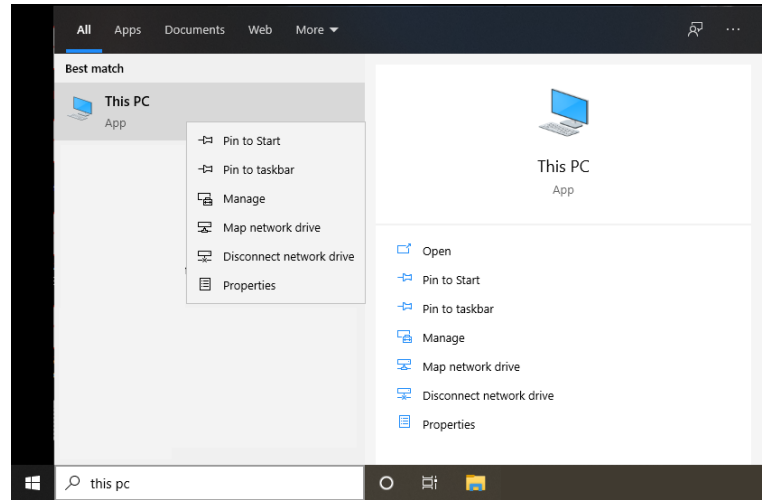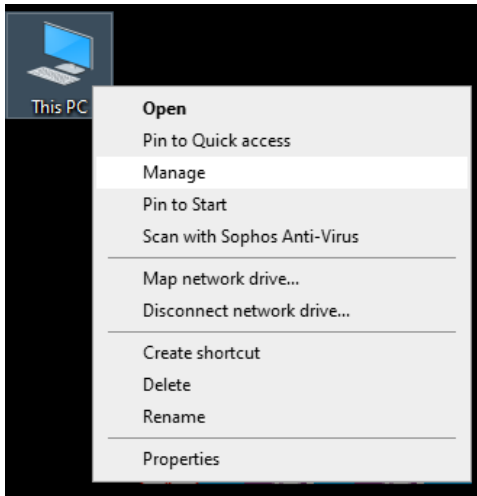

Under the Services and Applications category, expand and then click on Services (left).   The list of system processes are listed on the right.   Find 'CCS Service' in the list, highlight, and then click on the 'Restart' link to the top left.
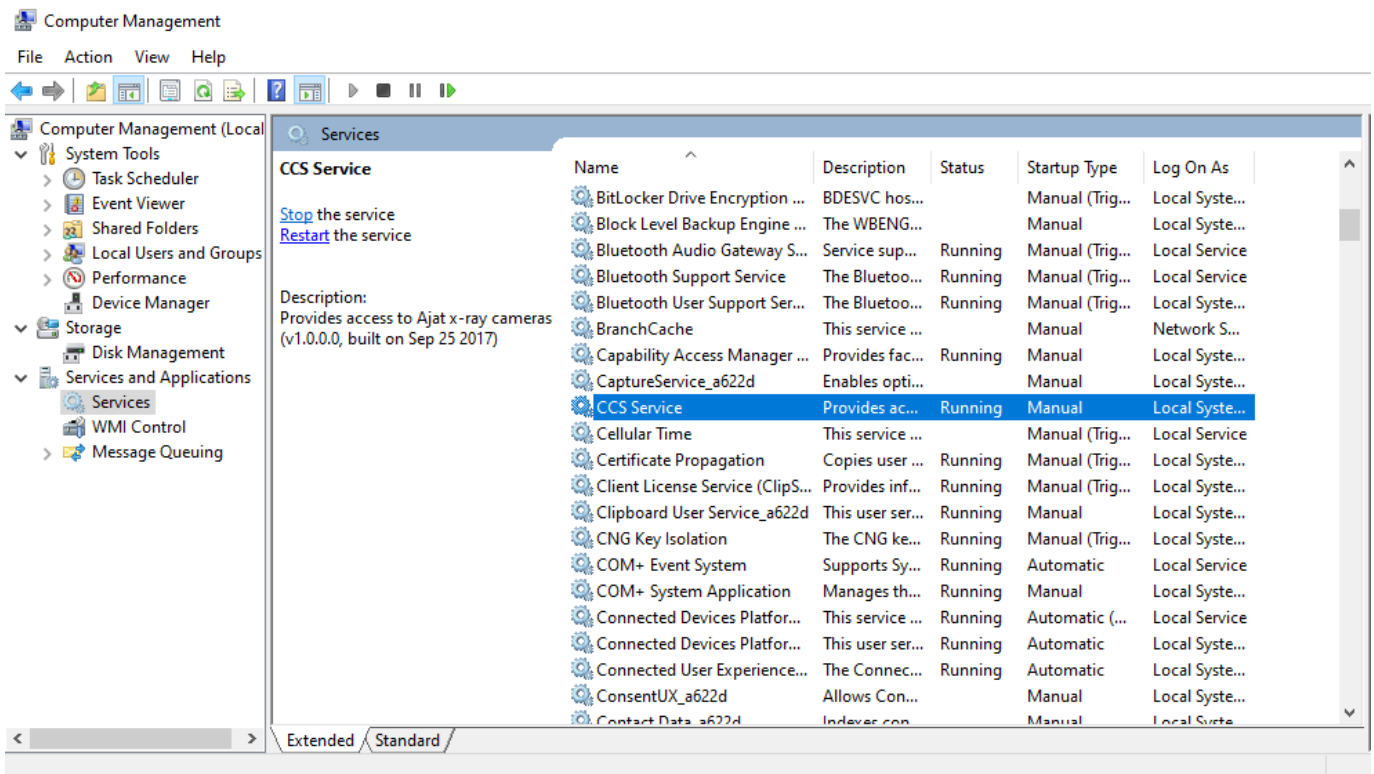
The background service can also be restarted by using the start menu search for "Stop Dental" and "Start Dental"

Open the Stop Dental Service program/command first.

Afterwards you'll see a small box show a message "waiting for service to stop"
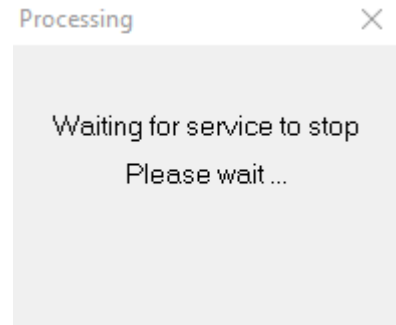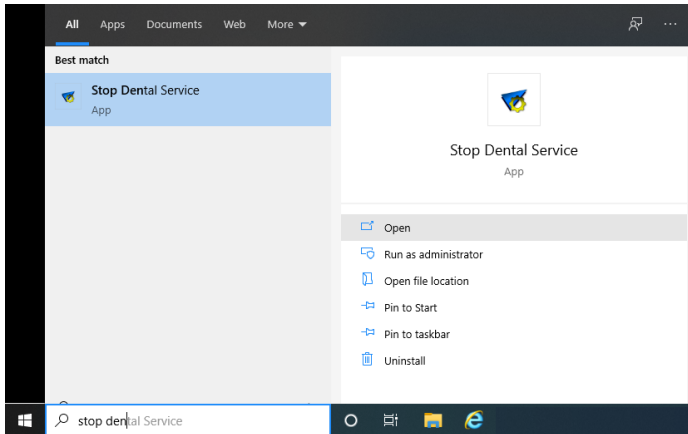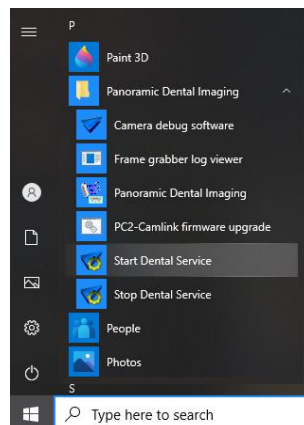
After the small box has disappeared, you can then Open the Start Dental Service program/command.
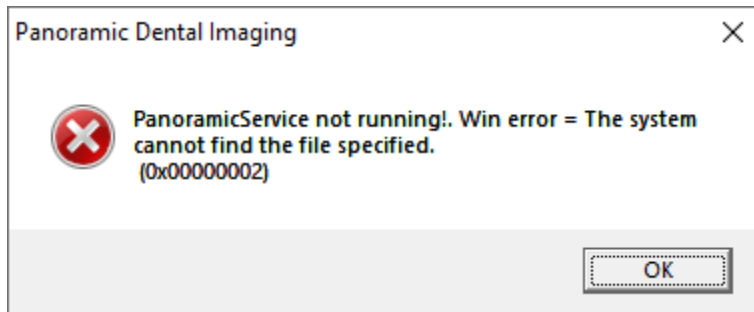
Again you will see a small box show a message "waiting for service to start"
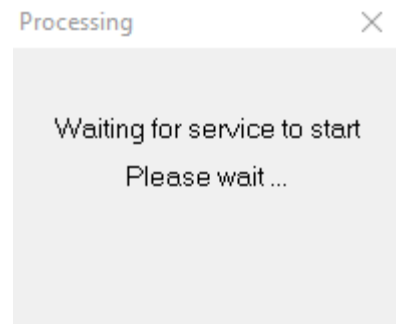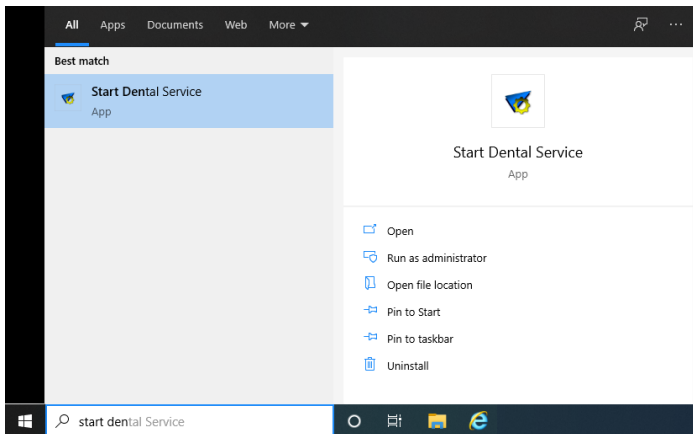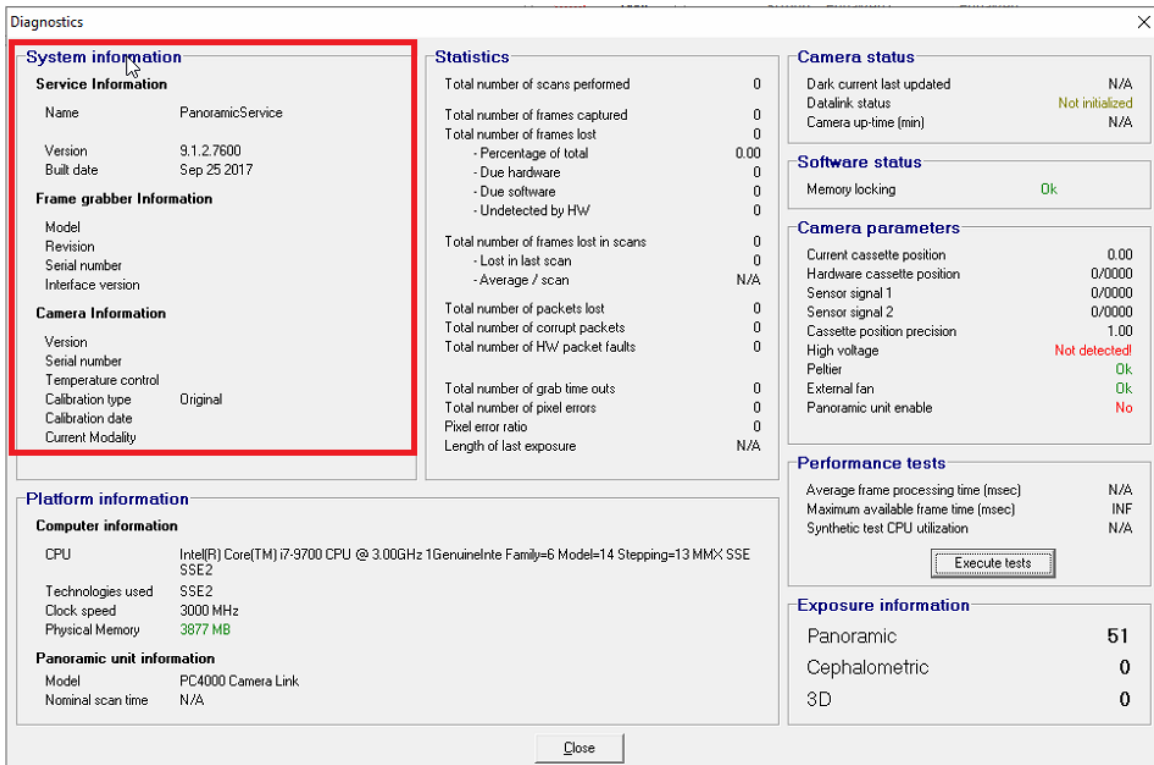
These commands are also listed under the Start Menu > Panoramic Dental Imaging >

Panoramic logo

Note: If the Panoramic Dental Software is opened when the background service is NOT running, an error message will appear as below. To correct this, start the background service as described above, and then the program can be opened.

Panoramic Dental Imaging error dialog: "PanoramicService not running!. Win error = The system cannot find the file specified. (0x00000002)" with OK button.

SOLVED? Read the possible reasoning below; otherwise continue to the next steps…

If restarting the background service fixes the connection issue, it would suggest that software is not running the latest version (and should be updated to v9.1.2.7600), or more likely that the software was hung up on a function and caused the software to halt. If the problem continues, investigate adding the panoramic program to any exclusions list of any Real-time scanning software (see below page 26, THIRD PARTY INTERFERENCE)

If still no connection, check the diagnostics screen again. If the "EPIX" description disappears after the restart of the background service, this tell us the software can no longer communicate with the interface card. Verify if the EPIX card is listed in the device manager.

Diagnostics screen showing System information, Statistics, Camera status, Software status, Camera parameters, Platform information, Performance tests, and Exposure information.
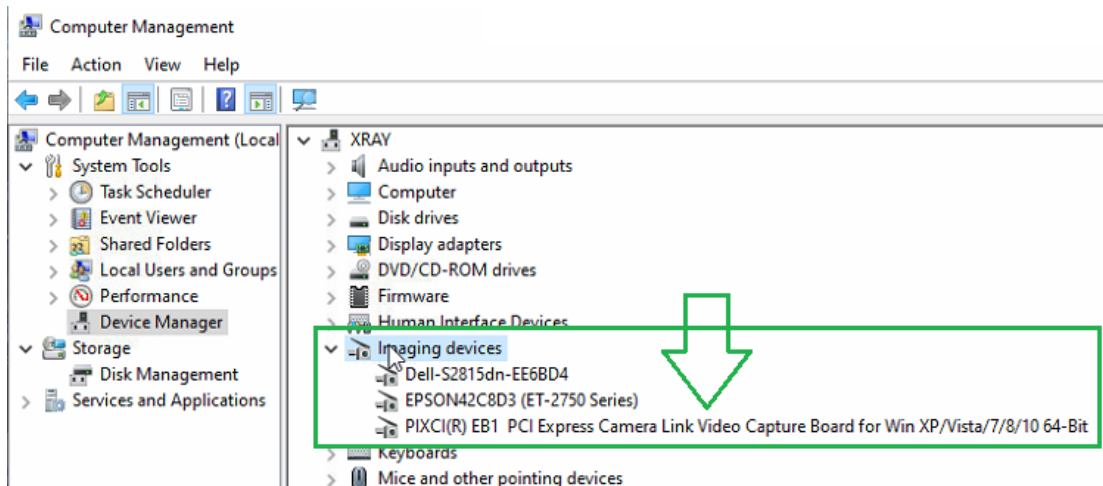
Checking the Device Manager

To Check the Device Manager, click on the Device Manager category on the LEFT PANE from the computer management windows mentioned earlier (Page 21). You can also access this from the start menu search for 'Device Manager'. Within Device Manager, look under the Imaging devices category. If 'Imaging devices' is not listed, then the card is not recognized as it's the only device within that category.
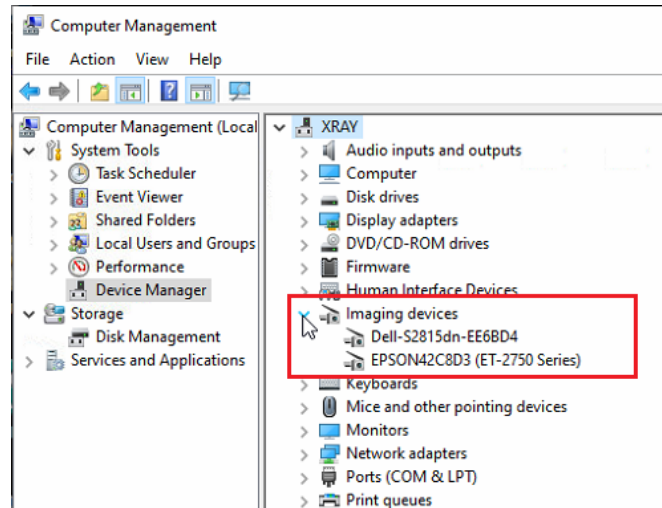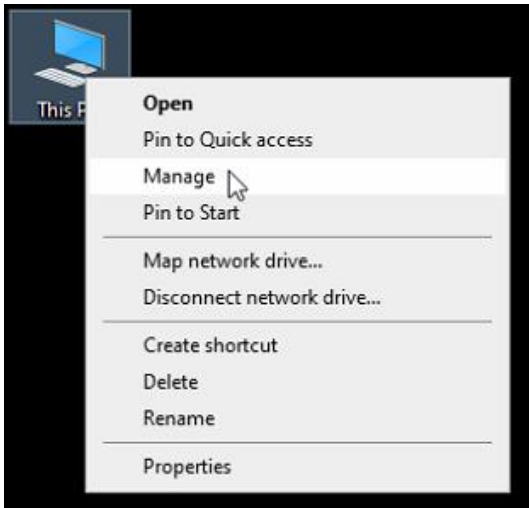
If the EPIX card (PIXCI(R) EB1 PCI Express Camera Link…) is NOT listed in the device manager (pictured above in Red), compared to correctly below in Green), then the PC does not recognize it, an obvious explanation why the software can't interface with it. Restart the computer and check the device manager again to verify if the card is recognized in the hardware list. If still not recognized, then shut the computer off, and then turn back on (not a restart). If the card is recognized on a shutdown/turn on, then we refer to this as a HARDBOOT EPIX. Epix card's with an older Firmware or compatibility issues with computers/motherboards tend to only work on Clean startups. Be aware of this as the computer may restart from Windows Updates or other software Restarts.

If the card is continued to be unrecognized or if a connection issue persists, then it is possible the card needs to be re-inserted into the computer, or use a different PCI-express expansion slot (x16 preferred and/or closest to the center of the board/CPU)

SOLVED? Read the possible reasoning below; otherwise continue to the next steps…

If the EPIX card was always recognized in the device manager, and not listed in the software diagnostics window, and restarting the computer restored the connection status in the software, this suggests the computer was put to sleep/hibernate. This is also shared with the FAST STARTUP option being enabled in the power options of the computer with Windows 10, turn this feature off. (For directions on how to do this refer to page 5). It could also be possible that the registry patch was not installed with the driver on (Page 9).

If shutting down the computer and turning it back on restores the Epix card in the device manager, and the software connection, then follow the HARDBOOT Epix concept. Whenever there is a connection issue, Shutdown only the computer off and turn it back on. The only way to avoid this hurdle is to purchase a new card that has a new(er) firmware. (Inside the software diagnostics v1.3 is a newer firmware)

Verify the Correct Grabber within Settings

If a different option is listed in Diagnostics, other than Epix, Verify the correct grabber is selected in the settings.

Example: The software will look for any <u>INTEL brand</u> Ethernet connection along with the EPIX card. If the computer onboard network port is INTEL brand, the software might be set to look at that interface rather than the correct one.

From the Tools menu at the top, choose Settings. Under the Grabber tab, choose the drop down list, and change/verify it is set to EPIX PIXCI EB1. This change WILL REQUIRE a computer restart.
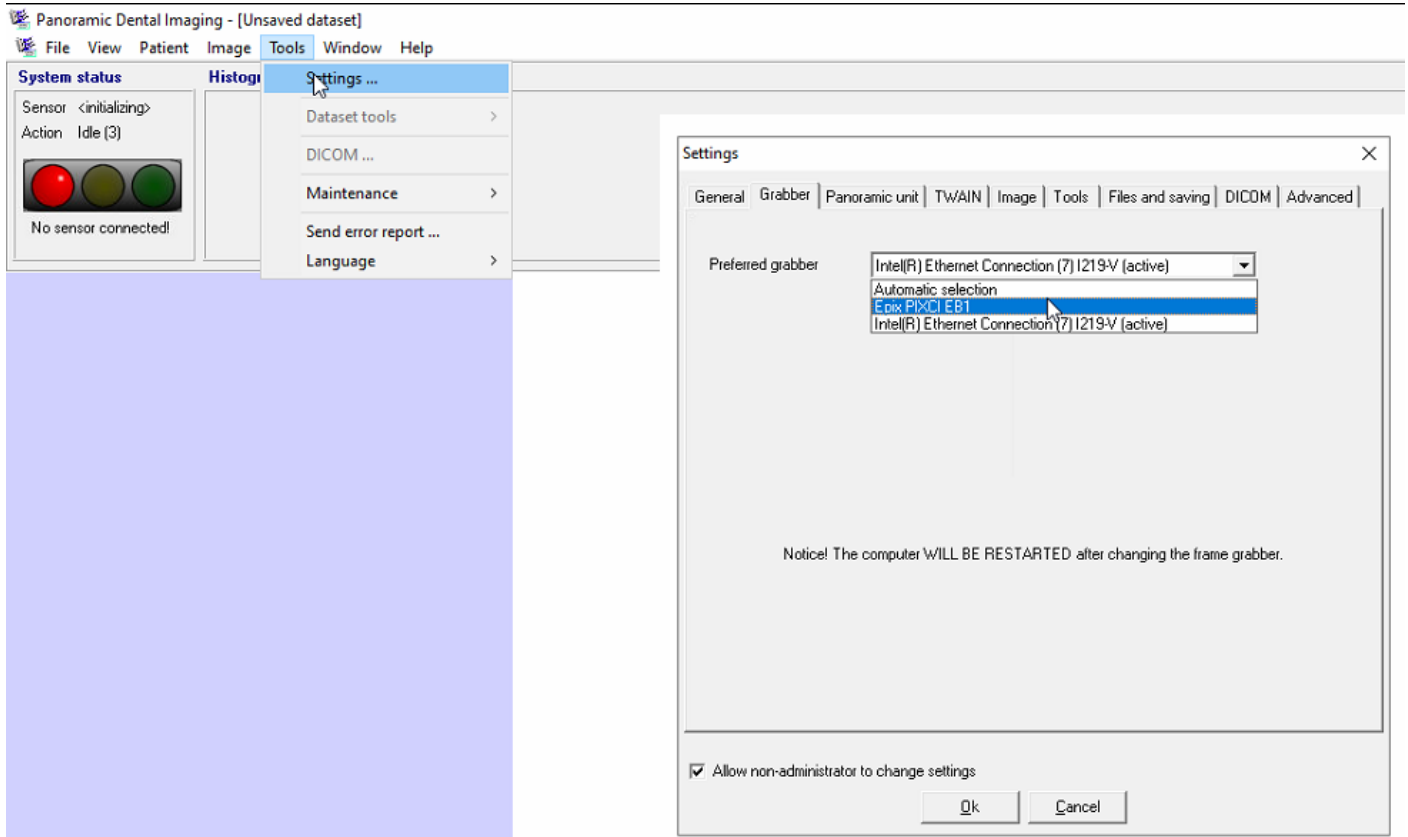
Third-Party Interference?

Next evaluate any Anti-Virus software, also any Real-time scanning options. Check the settings of those programs to best assure they are not monitoring or conflicting with the Panoramic Dental Imaging software folders Anti-Virus software does not know that the interface is connected directly to an x-ray machine.

Temporarily Disable the software protection to see if the status of the software changes to GREEN.

Folders and Directories to exclude from Anti-Virus monitoring are:

C:\ProgramData\Ajat\

C:\Program Files (x86)\Panoramic\

Processes to exclude from Anti-Virus monitoring are:

C:\Program Files (x86)\Panoramic\ccservice.exe

C:\Program Files (x86)\Panoramic\prtestapp.exe

C:\Program Files (x86)\Panoramic\srvtester.exe

Datacable Integrity?

Visually inspect the datacable connection on both sides, the computer connector and sensor. Unplug and plug back in both ends of the cable. You should feel or hear both sides of the connector snap into place. Also inspect the cable as it routes through the machine for rips, tears, bends, and kinks.

The best place(s) to look for physical damage would be directly above the patient's head position, by taking off the moon-shaped C-arm plate by the 4 phillip screws (or by taking a quick look into the gap to see above). The cable can tend to rub along the heads of two vertical allen screws. (Circled in Yellow with arrow)
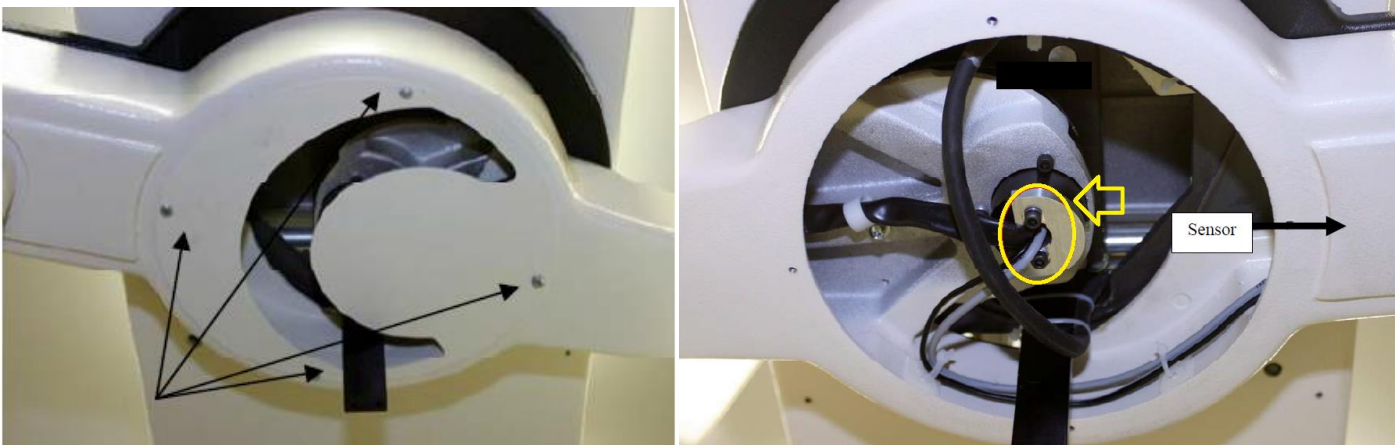
Another area to check would be about 10 inches further up the line.   You can best look at this part of the cable by looking into a gap/hole from the right side. You might need to press the top cover up if slouching, or pull the black trim cover down if in the way of view.

Front of Machine

Back of Machine
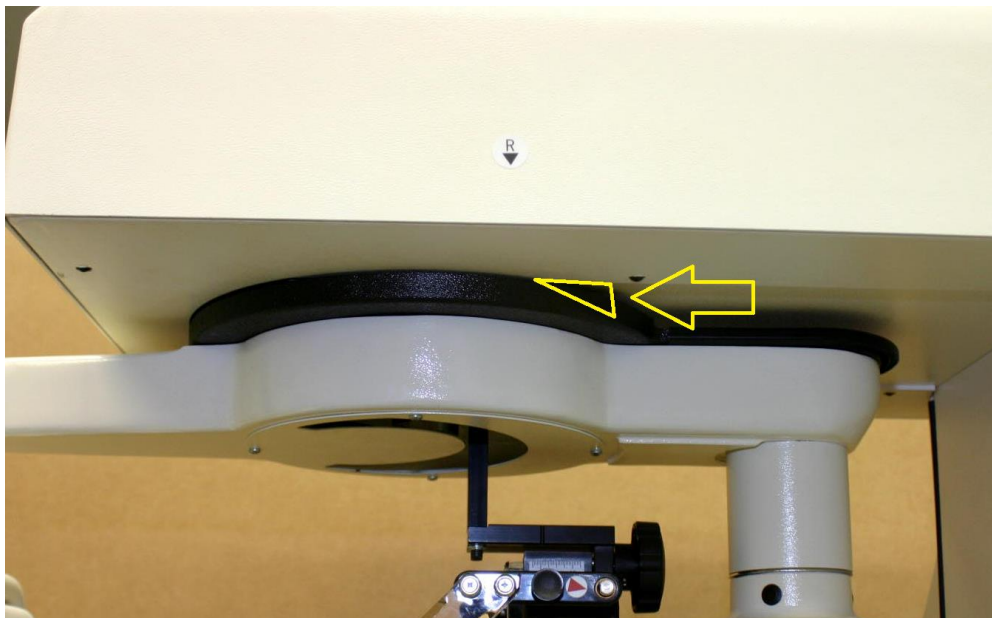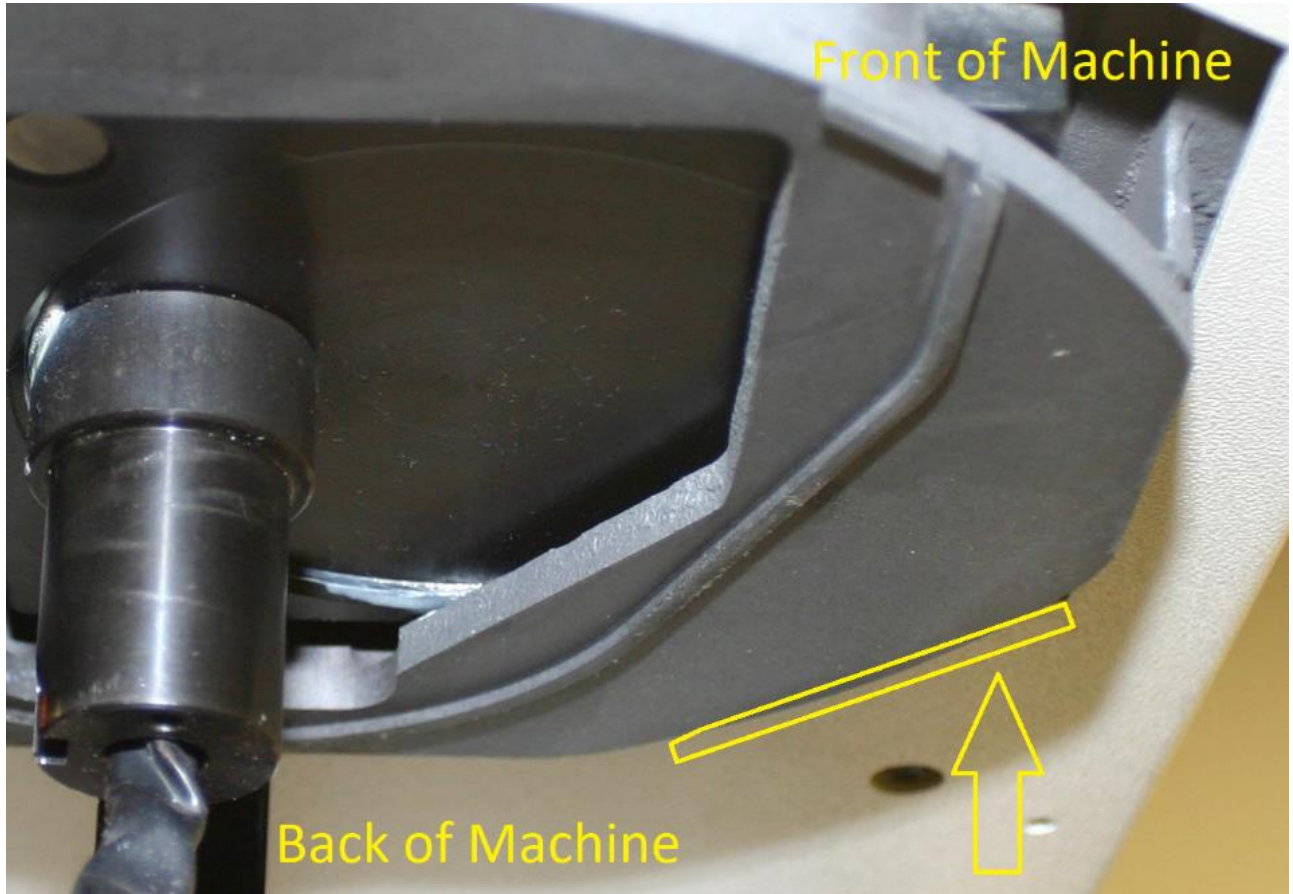
Verify the Sensor has Power

Remove the sensor covers by the Four 3/32 allen screws. Locate the Black DS Power supply brick.

The RED LIGHT shows power to the brick. This should be a solid red light.

The GREEN LIGHT shows an active connection to the software. A green light will be in the software as well.

The Yellow arrow is pointing to a 24VDC barrel connector coming from the top of the Panoramic Machine. (unplugged in the picture)

The Blue arrow points to the power cable connector the brick and the sensor.
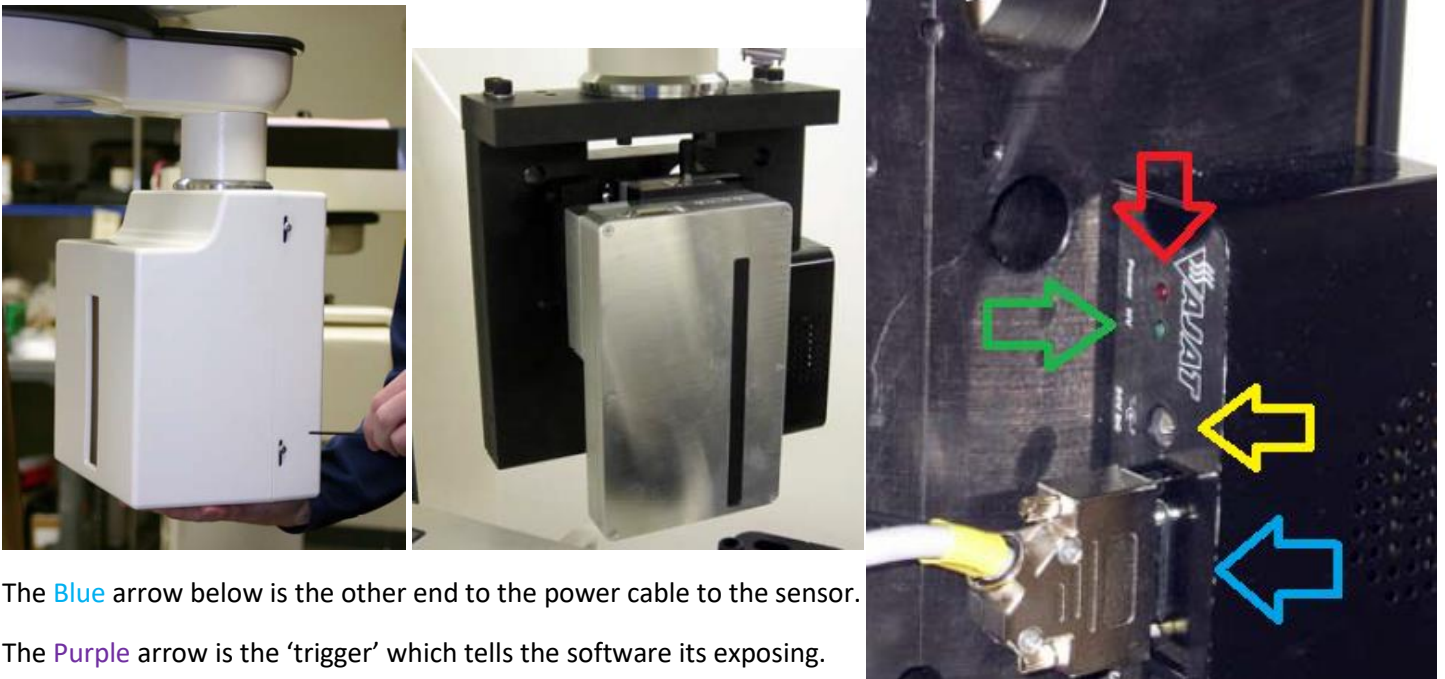
The Blue arrow below is the other end to the power cable to the sensor.

The Purple arrow is the 'trigger' which tells the software its exposing.

The Pink arrow is where the datacable connector is.   (Typically without the metal rectangular cover)

The GREEN arrow below points to the Sensor Power GREEN LED LIGHT. (Independent of the software connection)
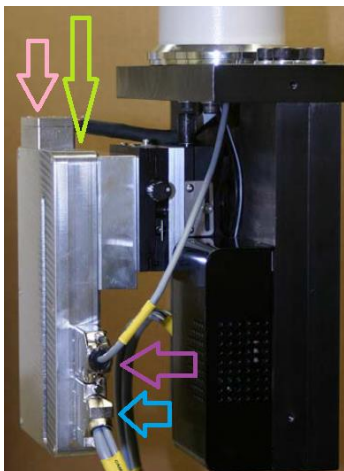
(Uncommon) Using the srvtester Application

Using the srvtester.exe application is quite uncommon. Most connection issues that are software-based are resolved using the instructions above. Of the very few instances where this tool is needed to correct a connection issue, it is more used on new computer installation/setups. First CLOSE the PANORAMIC DENTAL IMAGING Software if open.
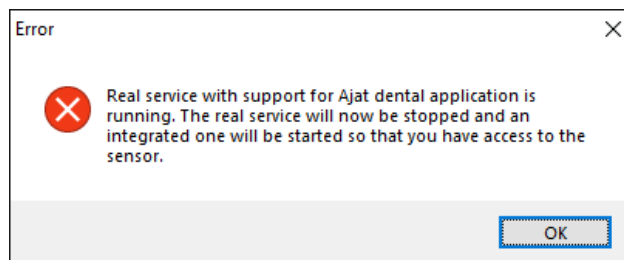
Then Right-click the desktop icon and choose **Open file location**.
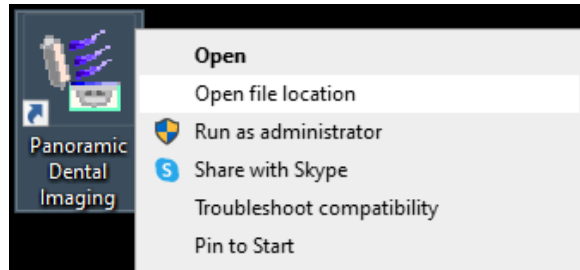
In the Program directory, beneath this file is another called srvtester.exe. Right-click this file and choose **Open**.
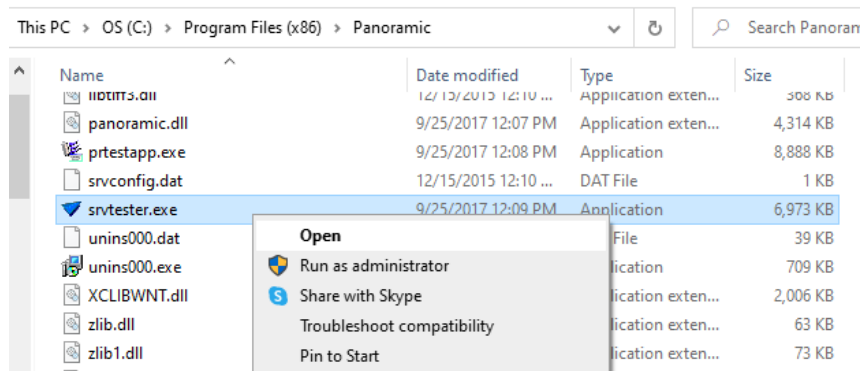
An Error message will appear. This is only a warning/information message. It is not truly an error. Click OK.
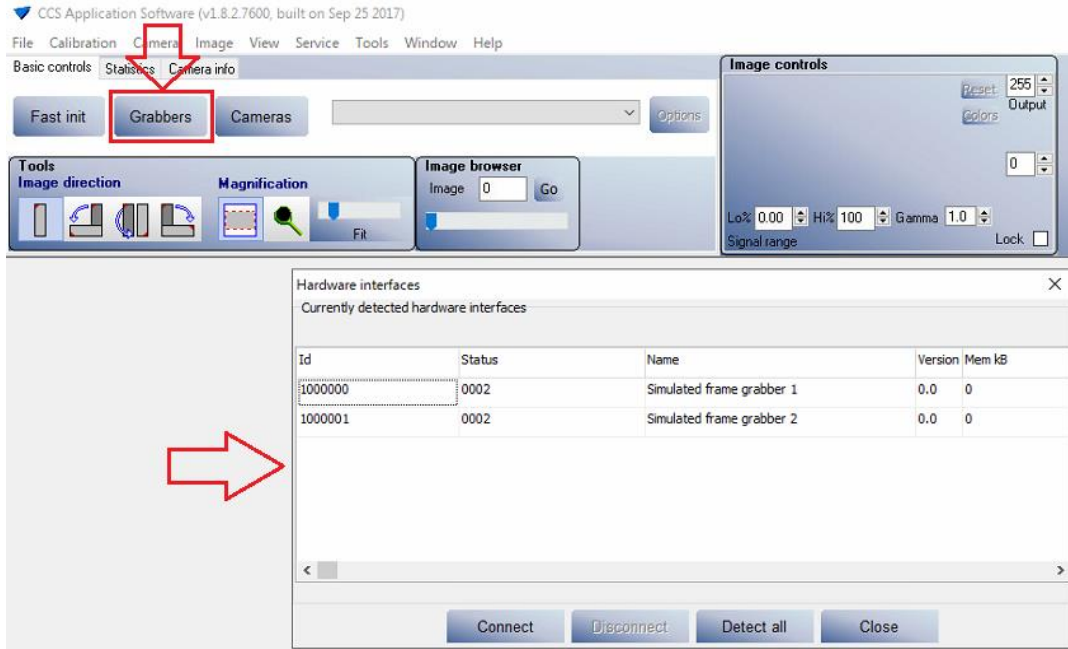
Be patient as the software will stop/start some background processes. This takes roughly 5 seconds depending on computer specifications / performance.
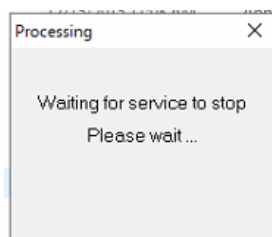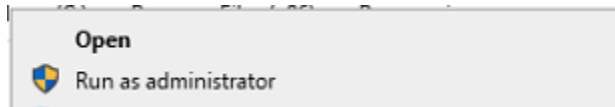
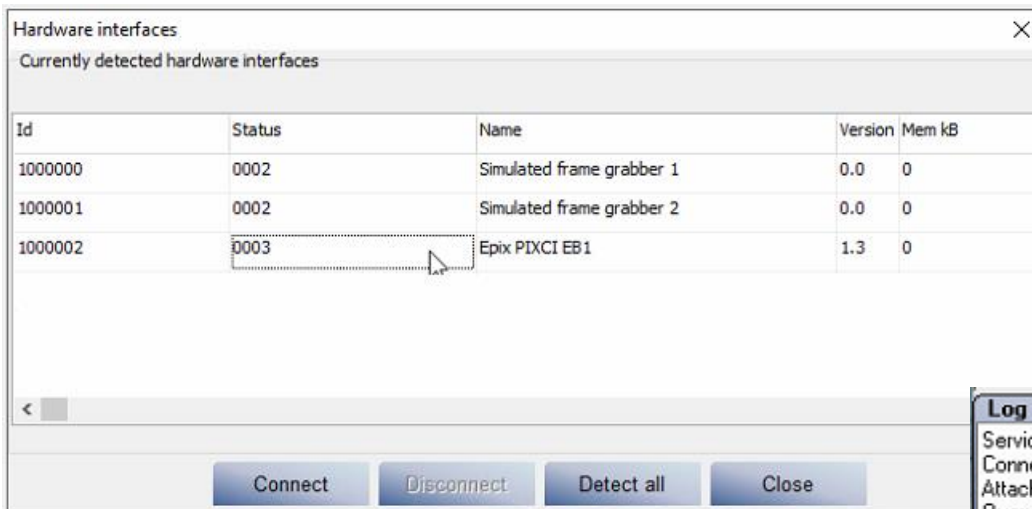Once the application opens, click the *Grabbers* button in the TOP LEFT.

Choose the EPIX grabber and click *Connect*.

If the EPIX grabber is not listed, then close the

application and re-run with Administrator Rights.

BE PATIENT!!! The software will want to Start/Stop the background process as you exit & reopen the program.


There is a real-time log of the event in the bottom left of the screen showing

a connection was successful. If there are error codes, it would suggest a

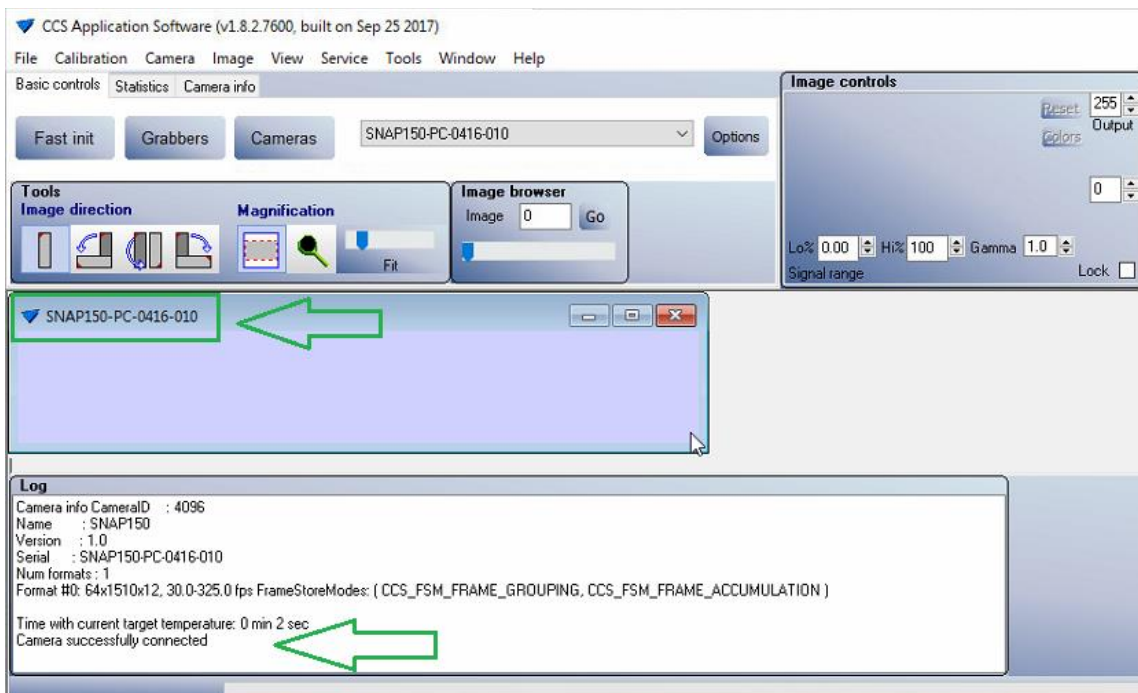problem with the card, or may need to be physically reinserted into the PC.
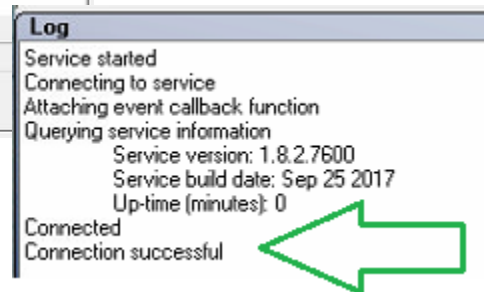
Next click the **Cameras** button in the TOP LEFT.

The software will take a brief moment to Detect the camera, and then display the list.

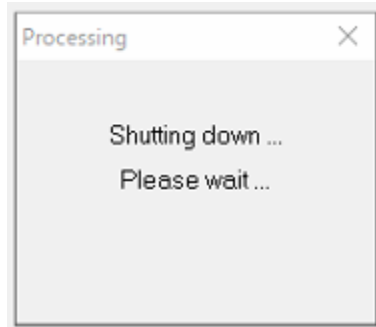Click on the sensor shown, and click the **Connect** button.
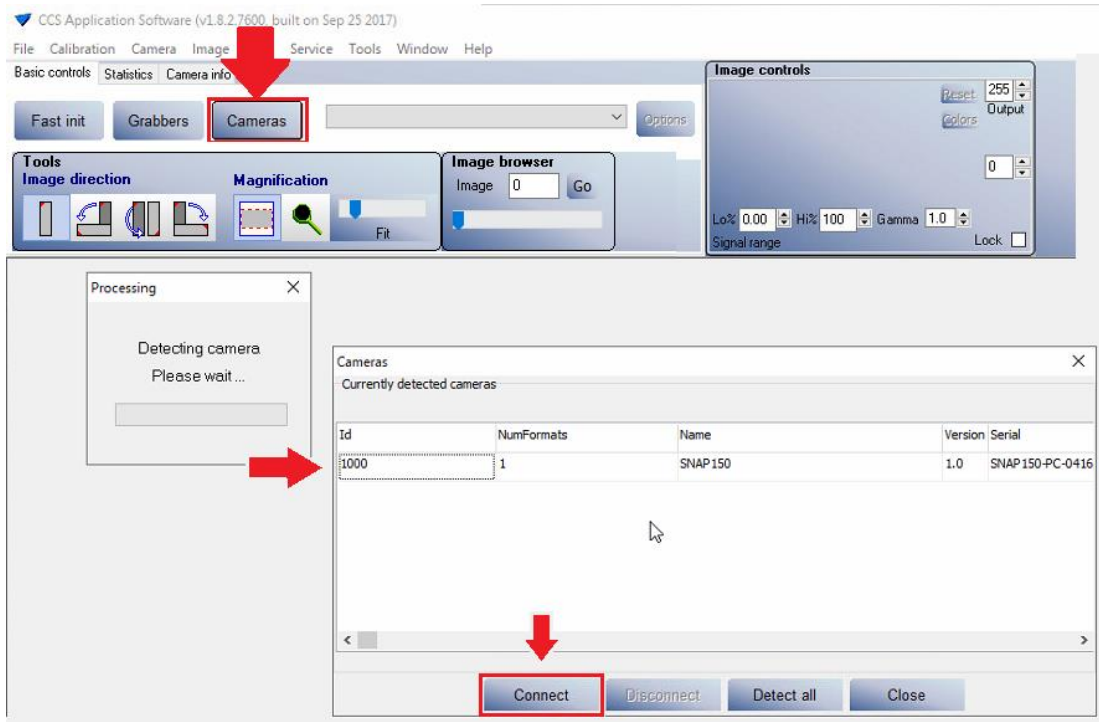
Again the real-time log will show a camera successfully connected.
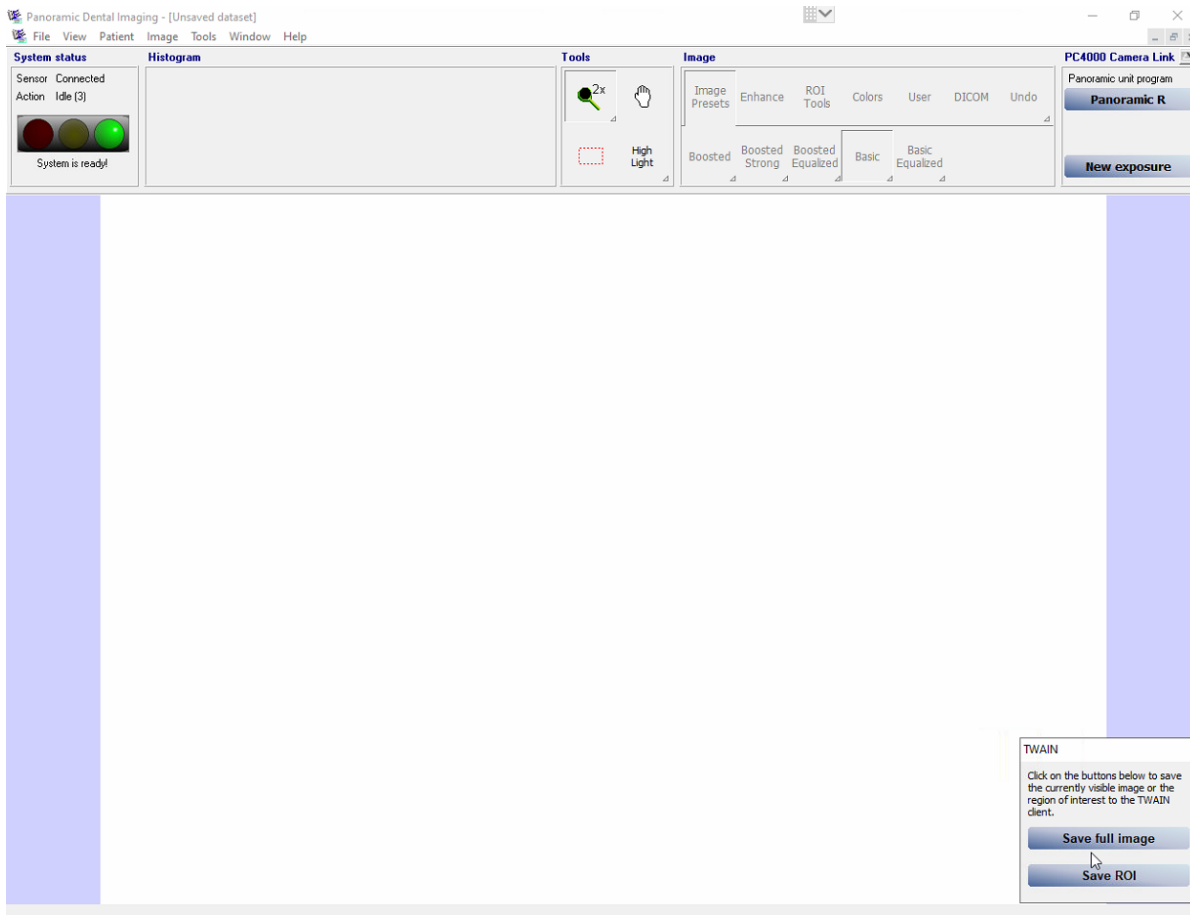
![Panoramic logo]

After a successful connection, close the srvtester application.

The program will stop/start the background process. Please wait.

After the notice disappears, wait 2 seconds and then Open the Panoramic Dental Software from the desktop shortcut.

You should find a GREEN Connection in the top left.

If the connection was resolved using the srvtester.exe application, this means that the automatic connection feature within the program could not detect key functions/settings and needed to be told how to connect. This can occur if there were complications during the software installation steps, or if the grabber was not in the PC at the time the software was installed. As uncommon as this is, it is typically on a new setup/installation of a computer.