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.

Image	Tools	Window Help			
Histog	9	Settings			
	[Dataset tools	>		
	[DICOM			
	1	Maintenance	>	Mechanical alignment	
	5 1	Send error report anguage	>	Calibration Diagnostics	
	_			Files and Folders \rightarrow	Open log file
					Open Log folder
					Open Calibration folder



IDENTIFY CAPTURE CARD



TypeEpix EB1ExpansionPCI Express x1 or x16Slot(use x16 slot for Windows 10)SizeFull or Half Height - call to order different size bracketCompatibleWindows 7 or 10Operating Systems22 and 64 bitUsed withPC-1000 Digital PC-4000MachinesValue (Marcine)		
ExpansionPCI Express x1 or x16 (use x16 slot for Windows 10)SizeFull or Half Height - call to order different size bracketCompatibleWindows 7 or 10 32 and 64 bitOperating SystemsPC-1000 Digital PC-4000MachinesPC-4000	Туре	Epix EB1
Slot(use x16 slot for Windows 10)SizeFull or Half Height - call to order different size bracketCompatibleWindows 7 or 10 32 and 64 bitOperating SystemsPC-1000 Digital PanoPanoPC-4000 Machines	Expansion	PCI Express x1 or x16
Windows 10)SizeFull or Half Height - call to order different size bracketCompatibleWindows 7 or 10 32 and 64 bitOperating32 and 64 bitSystemsPC-1000 Digital PanoPanoPC-4000 Machines	Slot	(use x16 slot for
SizeFull or Half Height - call to order different size bracketCompatibleWindows 7 or 10 32 and 64 bitOperating32 and 64 bitSystemsPC-1000 Digital PanoPanoPC-4000 Machines		Windows 10)
- call to order different size bracket Compatible Windows 7 or 10 Operating 32 and 64 bit Systems Used with PC-1000 Digital Pano PC-4000 Machines	Size	Full or Half Height
size bracket Compatible Windows 7 or 10 Operating 32 and 64 bit Systems Used with PC-1000 Digital Pano PC-4000 Machines		- call to order different
CompatibleWindows 7 or 10Operating32 and 64 bitSystemsPC-1000 DigitalPanoPC-4000MachinesPC-4000		size bracket
Operating32 and 64 bitSystemsPC-1000 DigitalPanoPC-4000MachinesPC-4000	Compatible	Windows 7 or 10
SystemsUsed withPC-1000 DigitalPanoPC-4000MachinesPC-4000	Operating	32 and 64 bit
Used with PC-1000 Digital Pano PC-4000 Machines	Systems	
Pano PC-4000 Machines	Used with	PC-1000 Digital
Machines	Pano	PC-4000
	Machines	

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

Best match This PC App		
Search the web	>	This PC _{App}
		□ Open □□ Pin to Start □□ Pin to taskbar □□ Manage □□ Map network drive □□ Disconnect network drive □□ Properties
0.51.5		

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

Control Panel Home	View basic information	about your computer	
💡 Device Manager	Windows edition		
💎 Remote settings	Windows 10 Pro for Works	tations	
System protection	© 2019 Microsoft Corporat	tion. All rights reserved.	Windows10
ᠹ Advanced system settings			
	System		
	Manufacturer:	Dell	\bigcirc
	Model:	Latitude 5480	(DELL)
	Processor:	Intel(R) Core(TM) i5-6440HQ CPU @ 2.60GHz 2.60 GHz	\bigcirc
	Installed memory (RAM):	16.0 GB (15.6 GB usable)	
	System type:	64-bit Operating System, x64-based processor	
	Pen and Touch:	No Pen or Touch Input is available for this Display	

DISABLE SLEEP, HIBERNATE, & FAST STARTUP

Power & sleep settings

System settings

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



e. Uncheck the boxes.

\$	Systen	n Settir	igs								
←	\rightarrow	× 1	\$	 Control Pane 	I → Hardware a	nd Sound ⇒	Power Options	> System Sett	ings 🗸	ري ال	Search Con
				Define po	ver buttons a	nd turn on	password pr	otection			
				Choose the p page apply to	ower settings that all of your powe	t you want for r plans.	your computer.	The changes y	ou make to the	settin	gs on this
				Power butto	settings						
				🕑 wi	en I press the po	wer button:	Shut down	~			
				Shutdown se	tings					-	
		_		Turn o This he Sleep Show ir	n fast startup (re ps start your PC f Power menu. hte	commended) aster after shu) Itdown. Restart is	n't affected. <u>L</u>	earn More		
				Show in	Power menu.					1	
				SHOW II	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 <u>Panoramic Dental Imaging</u>, or formerly called <u>Ajat Dental Imaging</u>.

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 <u>EPIX EB1 Drivers.zip</u> 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".

 Update Driver Software - Coprocessor Browse for driver software on your 	r computer
Search for driver software in this location:	
C:\Users\User\Documents	Browse For Folder X
☑ Include subfolders	Select the folder that contains drivers for your hardware.
→ Let me pick from a list of devi This list will show installed driver softw software in the same category as the d	ConeDrive ConeDrive Set User This PC Desktop Epix -Win10x64
0	 Documents Downloads Music
2	Folder: Epix -Win10x64

- 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".



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.

Perform	nance optimization	×
(The performance of the software has not yet been optimized for this hardware. The optimization process will take less than 30 seconds. Do you want to perform the optimization now?	
	Yes No	

b. At the top of the software click "Tools" then "Settings..."

🌿 Panoramic Dental Imag	jing - [Un	isaved d	ataset]	
🌿 File View Patient	Image	Tools	Window Help	
System status	History	, s	ettings	1
Sensor Not connected Action Idle (3)		D	ataset tools	>
		D	NCOM	
		N	Naintenance	>
No sensor connected!		S	end error report	
		L	anguage	>

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).

ettings	>
General Grabber Pano	oramic unit TWAIN Image Tools Files and saving DICOM Advanced
Preferred grabber	Intel(R) Ethernet Connection (7) 1219-V (active)
	Automatic selection
	Epix PIXCI EB1
	Intel(R) Ethernet Connection (7) 1219-V (active)

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.

PC1000 CAMERALINK OR PC4000 CAMERALINK



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

Settings	23
General Grabber Panoramic	unit TWAIN Image Tools Files and saving DICOM Advanced
Patient information imprinting	Image options
C None	✓ Center image after exposure
C Lower left corner	Maintain image size in manual focusing window
 Lower right corner 	Maintain greu level in manual focusing window
C Bottom center	Reset grey level settings when dataset changes
Orientation imprinting	Crop non-radiated regions after exposure
	🔲 Show white border horizontal
L and H markers	Show white border vertical

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.

Name	Date modified	Туре	Size
calib_p_SNAP150-PC-0913-20.dat	12/9/2017 12:07 PM	DAT File	12,445 KB
calib_p_SNAP150-PC-0913-20.dat.maske	12/9/2017 12:07 PM	PNG File	3 KB
🔳 calib_p_SNAP150-PC-0913-20.dat.prema	12/9/2017 12:07 PM	PNG File	2 KB
📄 calib_p_SNAP150-PC-0913-20.dat.temp	12/9/2017 12:07 PM	TEMP File	12,445 KB
calib_p_SNAP150-PC-0913-20.dat.txt	12/9/2017 12:07 PM	Text Document	3 KB
View >	Extra large icons	;	
View	Extra large icons	;	
View > Sort by >	Extra large icons Large icons	;	
View > Sort by > Group by >	Extra large icons Large icons Medium icons	;	
View > Sort by > Group by > Refresh	Extra large icons Large icons Medium icons Small icons	5	
View > Sort by > Group by > Refresh	Extra large icons Large icons Medium icons Small icons List	5	
View > Sort by > Group by > Refresh Customize this folder	Extra large icons Large icons Medium icons Small icons List • Details	5	
View > Sort by > Group by > Refresh Customize this folder Paste	Extra large icons Large icons Medium icons Small icons List Details Tiles	5	
View > Sort by > Group by > Refresh Customize this folder Paste Paste shortcut	Extra large icons Large icons Medium icons Small icons List • Details Tiles Content	5	
View > Sort by > Group by > Refresh Customize this folder Paste Paste shortcut Undo Delete Ctrl+Z	Extra large icons Large icons Medium icons Small icons List • Details Tiles Content	5	
View > Sort by > Group by > Refresh > Customize this folder > Paste > Paste shortcut Undo Delete Ctrl+Z Give access to >	Extra large icons Large icons Medium icons Small icons List Details Tiles Content	5	
View > Sort by > Group by > Refresh > Customize this folder > Paste > Paste shortcut Undo Delete Ctrl+Z Give access to New >	Extra large icons Large icons Medium icons Small icons List Details Tiles Content	5	



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



Envision C1	Δ
Panoramic unit program	
Automatic	

 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 <u>Guide to getting the best images</u> to adjust the default image adjustments

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

Only for PC1000 & PC4000 units.









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 <u>Equal Vertical</u> tool and adjusting the <u>Histogram</u> 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.

Tools		Image						
4 ^{2x}	\bigcirc	Image Presets	Enhance	ROI Tools	Colors	User	DICOM	Undo ⊿
	High Light ⊿	Denoise Lowpass 3x3	Denoise Median 3x3 ⊿	Sharpen 3x3 ⊿	Equal Vertical	→+ +	<u>+</u> + ↑↑	

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:





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**.

🌿 Panoramic Dental Imag	ing - [Un	saved da	ataset]					
🍇 File View Patient	Image	Tools	Window	Help				
System status	Histog	Se	ettings					
Sensor <initializing> Action Idle (3)</initializing>		Da	ataset tools	5	>			
		DI	ICOM					
		М	laintenance	e	>	Mechanical alignment		
No sensor connected!				Se	Send error report			Calibration
		La	anguage		>	Diagnostics		
					_	Files and Folders >		

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.

/stem informat	ion	Statistics		Camera status	
ervice Informatio	n	Total number of scans performed	0	Dark current last updated	11:08:3
Name	PanoramicService	Tatal number of frames each red	03410	Datalink status	Not initialize
Nume	1 di lordi il co ci filico	Total number of frames lost	02410	Camera up-time (min)	
Version	9.1.2.7600	- Percentage of total	0.00		
Built date	Sep 25 2017	- Due hardware	0,00	Software status	
		- Due software	ő	Memory locking	Ok
rame grabber int	ormation	- Undetected by HW	ŏ		
Model	Epix PIXCI EB1			Camera parameters	
Revision	1.2	Total number of frames lost in scans	0	Current cassette position	0.0
Serial number		- Lost in last scan	0	Hardware cassette position	0,000
Interface version		- Average / scan	N/A	Sensor signal 1	0/000
`amera Informatio		Total number of packets lost	0	Sensor signal 2	0/000
		Total number of corrupt packets	0	Cassette position precision	10
Version	5.0	Total number of HW packet faults	0	High voltage	Not detecte
Serial number	SCAN300FPC-1010-27-0891			Peltier	0
Temperature contro	I V1.00P	Total number of grab time outs	16	External fan	0
Calibration type	HD+	Total number of pixel errors	0	Panoramic unit enable	Ye
Calibration date	19.07.2011 12:07:08	Pixel error ratio	0		
Current Modality	Panoramic	Length of last exposure	N/A		
				Performance tests	
				Average frame processing time (msec)	NZ.
attorm informa	uon			Maximum available frame time (msec)	3,
Computer informat	ion			Synthetic test CPU utilization	NZ.
CPU	Intel(R) Core(TM) i7-9700 CPU @ 3.0 SSE2	0GHz1GenuineInte Family=6 Model=14 Stepping=13	B MMX SSE	Execute tests	
Technologies used	SSE2				
Clock speed	3000 MHz			Exposure information	
Physical Memory	3877 MB			Panoramic	51
anoramic unit inf	ormation			Conhalamatria	
Model	PC4000 Camera Link			Cephalometric	,
Nominal scan time	11,9 sec			3D	(

RESTARTING THE BACKGROUND SERVICE

(Important) To restart the background service, first CLOSE 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.

🞥 Computer Management							
File Action View Help							
🗢 🄿 🙍 📰 🖾 🔒 📔	2 📷 🕨 🗉 🖬 🕩						
Computer Management (Local	🔍 Services						
 System loois Task Scheduler Event Viewer Shared Folders Local Users and Groups 	CCS Service Stop the service Restart the service	Name BitLocker Drive Encryption Block Level Backup Engine Bluetooth Audio Gateway S	Description BDESVC hos The WBENG Service sup	Status Running	Startup Type Manual (Trig Manual Manual (Trig	Log On As Local Syste Local Syste Local Service	^
 N Performance Device Manager Storage Disk Management Services and Applications 	Description: Provides access to Ajat x-ray cameras (v1.0.0.0, built on Sep 25 2017)	Bluetooth Support Service Bluetooth User Support Ser BranchCache Capability Access Manager CaptureService_a622d	The Bluetoo The Bluetoo This service Provides fac Enables opti	Running Running Running	Manual (Trig Manual (Trig Manual Manual Manual	Local Service Local Syste Network S Local Syste Local Syste	
Services a WMI Control → ■ Message Queuing		CCS Service Cellular Time Certificate Propagation Client License Service (ClipS Clipboard User Service_a622d CNG Key Isolation COM+ Event System COM+ Event System COM+ System Application Connected Devices Platfor Connected Devices Platfor Connected User Experience ConsentUX_a622d	Provides ac This service Copies user Provides inf This user ser The CNG ke Supports Sy Manages th This service This user ser The Connec Allows Con	Running Running Running Running Running Running Running Running Running	Manual Manual (Trig Manual (Trig Manual Manual Manual Automatic Manual Automatic (Automatic Automatic Manual	Local Syste Local Service Local Syste Local Syste Local Syste Local Syste Local Syste Local Syste Local Syste Local Syste Local Syste	
< >	Extended Standard	IO). Contact Data a622d	Indeves con		Manual	Local Svite	

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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 <u>Start Dental Service</u> program/command.

Again you will see a small box show a message "waiting for service to start" Best match Start Dental Service 1 1 Processing Start Dental Service App 🗂 Open Waiting for service to start G Run as administrator Open file location Please wait ... - Pin to Start 🛱 Pin to taskbar 📋 Uninstall

These commands are also listed under the Start Menu > Panoramic Dental Imaging >

o 🖽 🥫 🥭



 \times



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.



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.

liagnostics		_			×
System informati	DN	Statistics		Camera status	
Service Information Name Version Built date Frame grabber Info Model Revision Serial number Interface version Camera Information Version Serial number Temperature control Calibration type Calibration date Current Modality	PanoramicService 9.1.2.7600 Sep 25 2017 Immation	Total number of scans performed Total number of frames lost - Percentage of total - Due hardware - Due software - Undetected by HW/ Total number of frames lost in scans - Lost in last scan - Average / scan Total number of packets lost Total number of packets lost Total number of grab time outs Total number of grab time outs Total number of pixel errors Pixel error ratio	0 0.00 0 0 0 0 0 N/A 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Dark current last updated Dark current last updated Datalink status Camera up-time (min) Software status Memory locking Current cassette position Hardware cassette position Sensor signal 1 Sensor signal 2 Cassette position precision High voltage Peltier External fan Panoramic unit enable	N/A Not initialized N/A Ok 0k 0/00000 0/000000
-Platform informat Computer information	ion			Performance tests Average frame processing time (msec) Maximum available frame time (msec) Swithetic test CPU utilization	N/A INF N/A
CPU Technologies used Clock speed Physical Memory Panoramic unit info Model Nominal scan time	Intel(R) Core(TM) i7-9700 CPU @ 3.00G SSE2 SSE2 3000 MHz 3877 MB mation PC4000 Camera Link N/A	Hz 1GenuineInte Family=6 Model=14 Stepping=13	MMX SSE	Execute tests Exposure information Panoramic Cephalometric 3D	51 0
		Close			

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 <u>NOT</u> listed in the device manager (pictured above in <u>Red</u>), compared to correctly below in <u>Green</u>), 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 reinserted 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.

📽 Panoramic Dental Imag	ing - (Un	saved dataset]		
🌿 File View Patient	Image	Tools Window Help		
System status	Histog	Syttings		
Sensor <initializing> Action Idle (3)</initializing>		Dataset tools	>	
		DICOM		Settings X
		Maintenance	>	General Grabber Panoramic unit TWAIN Image Tools Files and saving DICOM Advanced
No sensor connected!		Send error report Language	>	Preferred grabber Intel(R) Ethernet Connection (7) I219-V (active)
				Automatic selection Automatic selection Coix PIXCI EBI Inite[R] Ethernet Connection(7)1219-V (active) Notice! The computer WILL BE RESTARTED after changing the frame grabber. Allow non-administrator to change settings
				<u><u>D</u>k <u>C</u>ancel</u>

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.





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 <u>CLOSE</u> 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**.

This	PC → OS (C:) → Program	n Files (x86) > Pa	noramic	ب 5	Search Panora
^	Name 🕲 IIDTITT3.QII		Date modified	Type Application exten	Size 308 K.B
	🚳 panoramic.dll		9/25/2017 12:07 PM	Application exten	4,314 KB
	🌿 prtestapp.exe		9/25/2017 12:08 PM	Application	8,888 KB
	srvconfig.dat		12/15/2015 12:10	DAT File	1 KB
	🔝 srvtester.exe		9/25/2017 12:09 PM	Application	6,973 KB
	unins000.dat	Open		File	39 KB
	🐻 unins000.exe	👎 Run as ad	ministrator	lication	709 KB
	🗟 XCLIBWNT.dll	Share with	n Skype	lication exten	2,006 KB
	🚳 zlib.dll	Troublesh	oot compatibility	lication exten	63 KB
	🚳 zlib1.dll	Pin to Star	rt	lication exten	73 KB

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.

Processing	×
Waiting for service to stop Please wait	
	i i

Once the application opens, click the *Grabbers* button in the TOP LEFT.

Choose the EPIX grabber and click *Connect*.

	CCS Application Software (v1.8 File Calibration Comera Imag	.2.7600, built on Sep 25 2017) e View Service Tools Wi	ndow Help				
	Basic controls Statistics Camera in Fast init Grabbers	o Cameras		✓ Options	Image controls		Reset 255 - Golors Output
	Tools Image direction	agnification	Image browser Image 0 Go		Lo% 0.00 🗢 Hi% 100 🗢 Signal range	Gamma [0 ‡
		Hardware interfaces Currently detected h	ardware interfaces				×
		Id	Status	Name		Versio	n Mem kB
		1000000	0002	Simulated fra	me grabber 1	0.0	0
		1000001	0002	Simulated fra	me grabber 2	0.0	0
			Connect	Disconnect	Detect all Clos	e	>
If the EPIX grab	ber is not listed, th re-run with Admir	en close the iistrator Rights.	Open	administrator	······································		

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

lardware interfac Currently detected	ces d hardware interfaces				×
Id	Status	Name	Version	n Mem kB	_
1000000	0002	Simulated frame grabber 1	0.0	0	
000001	0002	Simulated frame grabber 2	0.0	0	
1000002	0003 N	Epix PIXCI EB1	1.3	0	
<	Connect Discor	nnect Detect all C	Close	Lo Ser Cor Atta Que	g vice started inecting to service inching event callback function erying service information

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.

asic controls Statistics Camera info	Cameras		~	Options	Reset. Colors	255 🜲 Output
Tools mage direction	Magnificatio	n Fit	Image browser Image 0 Go	Lo% 0.00 호 Hi% 100 Signal range	∲Gamma <u>1.0</u> ¢ Le	0 🔹
Processing Detecting ca	× mera	Cameras				×
Please wa	it	Currently detected	cameras		(1) (1) (1)	Proc. Marine
		Id 1000	NumFormats	Name SNAP150	Version	Serial SNAP150-PC-041
				2		
		<		57		

Again the real-time log will show a camera successfully connected.

Basic controls Statistics Camera info	Image controls
Fast init Grabbers Cameras SNAP150-PC-0416-010	Options
Tools Image direction Magnification Image 0 Go	0 ‡
	Lo% 0.00 ♥ Hi% 100 ♥ Gamma 1.0 ♥ Signal range Lock
Log	
Camera info CameralD : 4096 Name : SNAP150 Version : 1.0 Serial : SNAP150-PC-0416-010 Num formats : 1 Ferrer MD : 404510412 : 20.0.2025 0 for Ferrer Chamber (ISSS FEM FRAME ISBN 1990). ISSS FEM FRAME	
Format #0: 64x1510x12, 30:0-323:0 Ips FrameStoreModes: [CCS_FSM_FRAME_GROUFING, CCS_FSM_FRAM	

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.