SENSOR▸X

SensorX Intraoral Sensor

Size #1	Size #2
PN - G9510A	PN - G9520A

Software Installation
and
Configuration Guide

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FOREWORD

General

The instructions provided are limited to the integration of size #1 and size #2 SensorX Intraoral Sensors, which are referred to as SensorX in this manual. These devices work using TWAIN. This document does not provide detailed installation or operation instructions for the third party imaging management software. Therefore, the user must refer to the individual software manufacturer user documentation for all information specific to installing the application and its subsequent detailed operation.

Pre-Installation Check

Perform the following checks to verify that the computer system and associated monitor resolution meet or exceed the requirements needed to operate SensorX.

1. Refer to section 1 and make sure that the computer system being used has the requirements necessary to operate SensorX.

2. Check or set the monitor resolution using the procedure provided by section 2 for the Windows operating system in use.

VistaEasy Installation

Perform the following to setup and configure SensorX. Install the SensorX from the Software and Manual disc provided with the system. This allows full device functional operation via the TWAIN interface.

1. Refer to section 3 (procedure 3.1) to connect the SensorX to the computer.

2. Refer to section 3 (procedure 3.2) to install VistaEasy.

3. Refer to section 3 (procedure 3.3) to register the device in VistaConfig.

4. Refer to section 3 (procedure 3.4) when acquiring images via the TWAIN Interface.

5. Refer to section 3 (procedure 3.5) to activate VistaEasy View if applicable.

Disclaimers:

This document has been created and is provided by Air Techniques, Inc. and not the SensorX digital imaging systems manufacturer, Duerr Dental. Duerr Dental makes no representation or warranty concerning the accuracy or completeness of the instructions, guides and other information contained herein. This document and the information contained herein should not be construed to be a part of the SensorX digital imaging systems product.

The procedures provided in this document are limited to the specific revision or version of the third party imaging management software listed.

If problems occur due to changes of the application revision or version, then refer to the latest revision of this document located at www.airtechniques.com.

Important: The procedures provided in this document were successfully employed using the specific revision or version of the imaging management software as listed below. Refer to the latest version of this document located on our web site, ***www.airtechniques.com*** if revisions or versions change.

4.   Third Party Imaging Management Application Setup

This section is limited to the integration of SensorX into third party applications as an image acquisition device using the TWAIN interface It does not provide detailed installation or operation instructions for the imaging management software. Therefore the user must refer to the individual software manufacturer user documentation for all information specific to installing the application and its subsequent operation. The imaging management software covered includes the following.

Third Party Imaging Management Software

Item	Application Setup	Page
4.1.	Apteryx/XrayVision, Version 4.0	12
4.2.	Dexis, 10.0.8.55	16
4.3.	EagleSoft 20.10.04	19
4.4.	Kodak KDI, Version 6.12.9.0	23
4.5.	TigerView 8.1	25
4.6.	Visix Pro 7.7.15	28

COMPUTER REQUIREMENTS

Important: To operate SensorX, it must be connected to a compliant Computer System supplied by the customer. In addition, authorized third party imaging management software, purchased from your dealer or other company, must be installed on the computer in order to operate SensorX.

Computer System Required Components

The minimum computer system, computer and monitor, requirements necessary to operate SensorX are listed below.

Operating System:	Microsoft Windows 8.1 (not Windows RT)
	Microsoft Windows 10 (Pro or higher)
Interface:	USB 2.0 or later
Hard Drive:	200 MB available disk space required to start scanning.
Image Management Software:	Compatible authorized third-party software (not included with product).

Recommended Components

The items listed below are recommended (but not required) computer system components to aide in SensorX operation

System RAM:	≥ 4 GB
Hard Drive:	Workstation (without database) ≥ 50 GB
CPU/Speed:	≥ Intel Core i3r
Monitor:	Resolution ≥ 1280 x 1024
	Depth of color 32-bit, 16.7 million colors
Peripherals:	Standard Keyboard & Mouse
	Backup Device
	External Surge Protector
	Power supply backup

Protection from Cybersecurity Threats

The unit is to be connected to a computer that can be connected to the Internet. Therefore, the system needs to be protected from threats from the Internet.

a. Use antivirus software and update it regularly. Look for evidence of possible virus infection and, if applicable, check with the antivirus software and remove the virus.

b. Perform regular data backups.

c. Provide access to units only to trustworthy users, e.g. by means of user name and password.

d. Make sure that only trustworthy contents are downloaded. Install manufacturer authenticated software and firmware updates only.

2. Monitor Resolution Settings:

The following section provides guidelines to set the resolution of the monitor to work with SensorX units manufactured by Air Techniques. This allows the monitor to display the highest quality image produced by the device. Make sure that the monitor is correctly set to display at least **1280 x 1024** for SensorX. Refer to the Microsoft Windows documentation as necessary.

Perform the following to check or set the monitor resolution in computers using Windows 10 Professional or Enterprise.

1. Right click the Desktop and observe that the **Settings** pop up window opens.
2. Select *Display settings* to open the **Settings** window.
3. Using the resolution drop down menu, set to display at least **1280 x 1024** for SensorX. The maximum setting is recommended.
4. Close the **Settings** window.

Display Settings Drop Down Window

Advanced Display Settings Window

Resolution Drop Down Menu
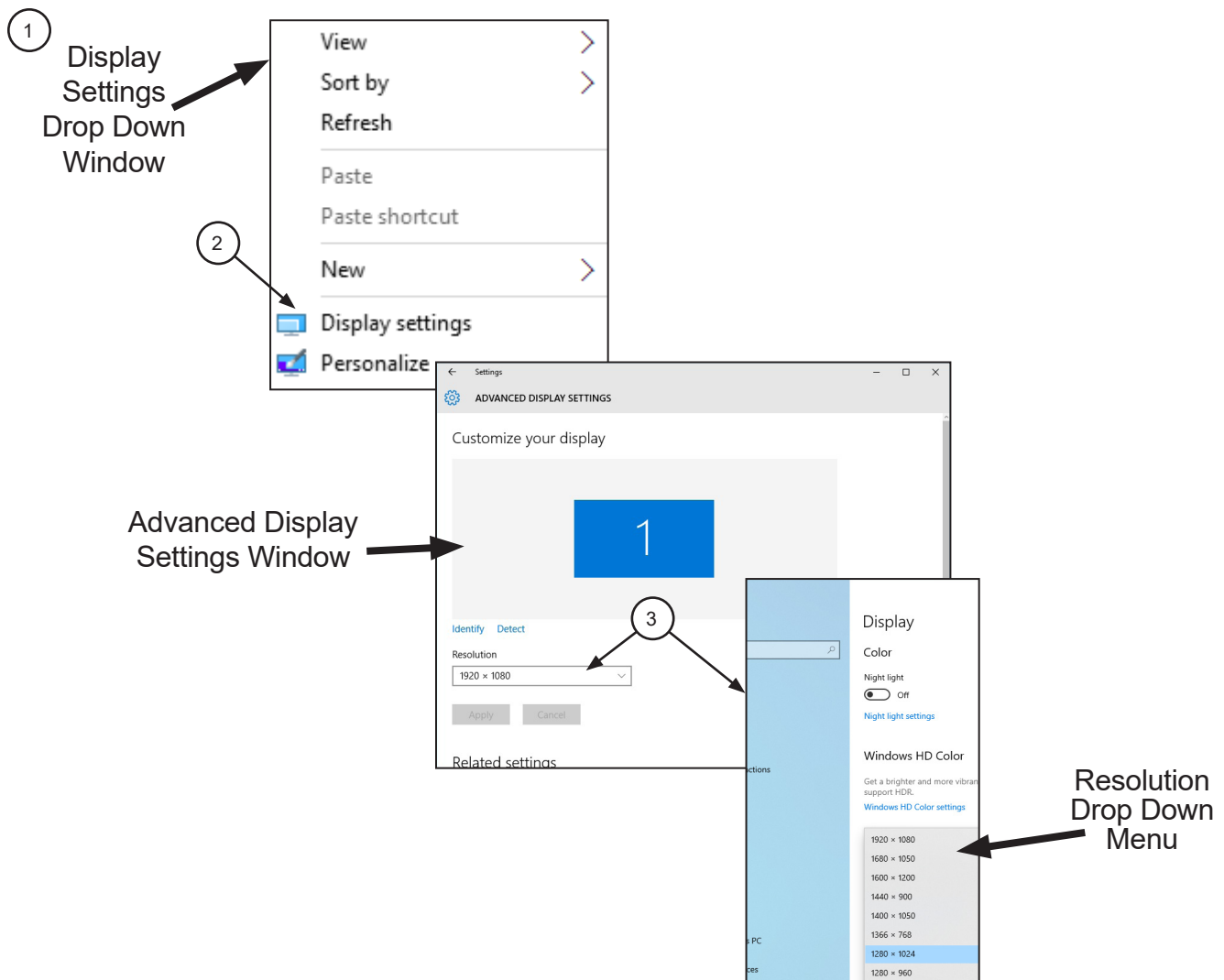
3. **VistaEasy Installation.** The SensorX must be identified and setup on the facility computer before the device will operate properly. This is accomplished by installing the VistaEasy program provided with the device on the DBSWIN disk. In addition to providing support for the TWAIN interface still image capture feature, VistaEasy also installs the Driver Setup program which provides the necessary device drivers.

VistaEasy is installed the first time from the supplied disk. The program allows the setup of multiple devices. Once installed, the Driver Setup program is run from the Windows Start button whenever additional devices are installed.

3.1 SensorX USB Connection.

   a. Connect the SensorX to the USB Type A connector located on the computer. Windows will detect SensorX as a new USB Device.

3.2 VistaEasy Installation from Disk. Install VistaEasy from the DBSWIN disk. Normally, this program runs automatically when the disk is inserted into the drive for the first time. If not, run the setup program located in the root directory of the disk (typically **D:\CD_Start.exe**). Once running, observe that the Setup window displays and perform the following steps.

   a. Select the Driver Tab and observe that installation software options appear.

   b. Select the VistaEasy installation option from the menu and observe that the VistaEasy installation pop up window opens.

   c. Click **OK.** Notice that the installation wizard message appears and observe that additional windows appear questioning device setup options. Accept the defaults and click **Next** and then **Install** to advance the installation.

   d. Observe that the installation runs automatically showing various completion status windows such as the one shown. Please wait as the installation progresses.

   e. At this point, the Driver Setup windows opens. This is where the drivers for each connected device are installed making it able to operate properly. Click **Next** when the setup is completed for all connected devices.

   f. Observe that a pop up window opens stating a successful installation. Click **OK.**

3.3 **Registering the device in VistaConfig.** Once VistaEasy is installed, the SensorX must be registered with the program to allow the device to work. Register the device by performing the following steps.

a. Connect the device and click the Windows Start button.

b. Select the Air Techniques folder.

c. Click VistaConfig and observe that the VistaConfig window opens.

   1. Select the appropriate SensorX as the device to be registered within VistaConfig by checking the corresponding check box.

   2. Refer to SensorX manual section 7.3 Installing the Calibration Data, which will allow you to automatically install the calibration files on the PC.
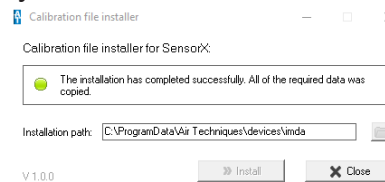
   3 Click the test tab

   4. Select the appropriate SensorX from the Registered Devices drop down menu.

   5. Select **All** from the **Mode class** drop down menu.

   6. Select **High Resolution** from the **Mode** drop down menu.

   7. Select the **Read image** button and observe that the Scan preview pop up displays showing the image acquisition from a sensor. Observe that the VistaEasyView Main Image window opens once the image is acquired. Successful image acquisition shows successful SensorX registration with program.
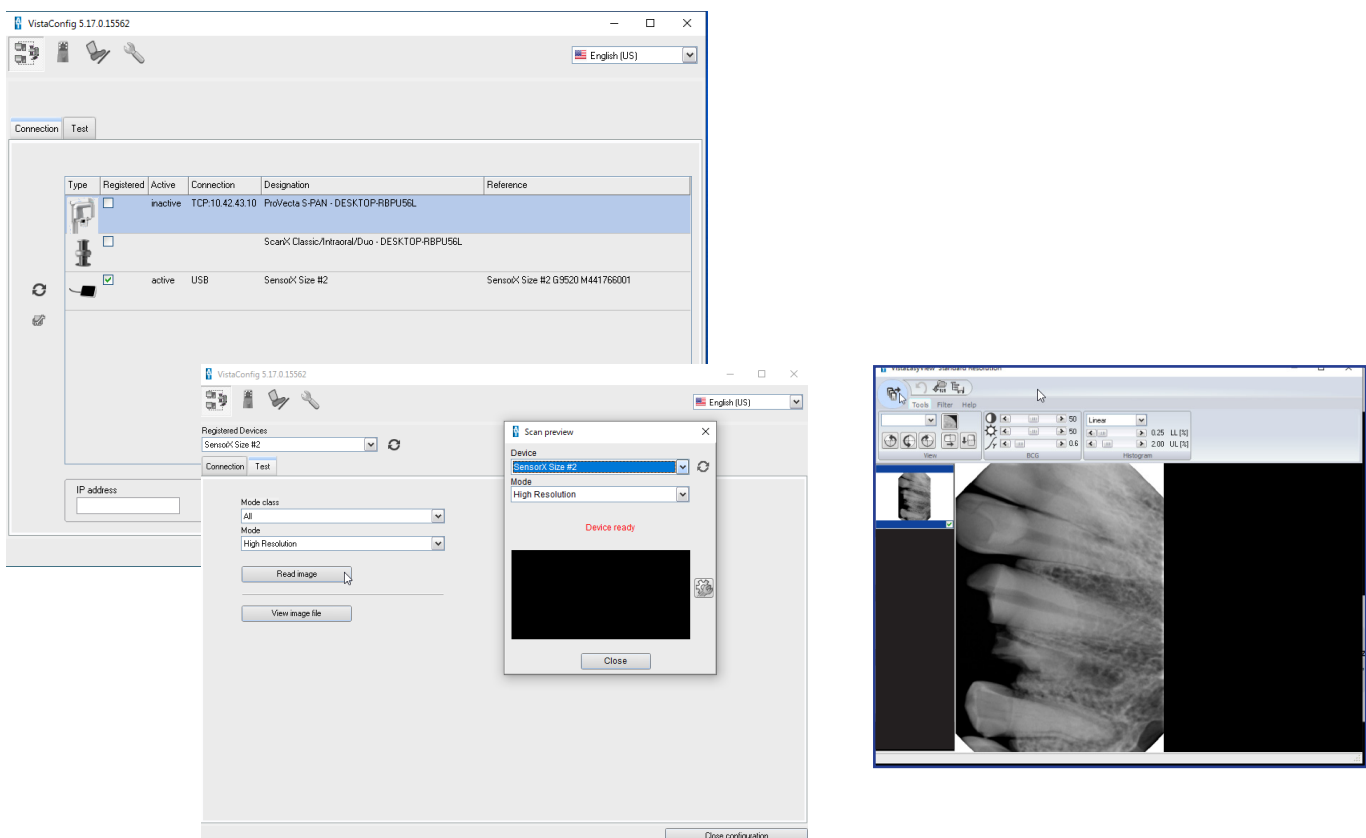
3.4   Using the TWAIN Interface (Source) with Third-Party Applications. VistaEasy provides the TWAIN interface for all the third-party applications covered in this document. Once the third-party application is set up to use the TWAIN interface (See section 4.), image import processing is done via the VistaEasyView window shown below.

Quick access toolbar: Allows management of captured images selected in the image preview bar. See descriptions below.

Tool and filter controls: Allows manipulation of captured image selected in the image preview bar. Refer to descriptions below.

Image preview bar: Shows the thumbnail of captured image and allows images to be marked for the transfer. Individual images can also be deleted from the image preview bar.

Main image window: Previews captured image selected in the image preview bar.

> ⚠️ The settings that were made are saved directly in mode. The saved changes are then always applied when this mode is used.

Quick Access Toolbar

Send images: Sends selected images marked with a check mark to the third-party application.

Undo: Reverts the last step to its previous state.

Load original image: Loads the original status of the image.

Save mode configuration: Saves tool and filter settings (BCG, filter values and histogram optimization) that were made.
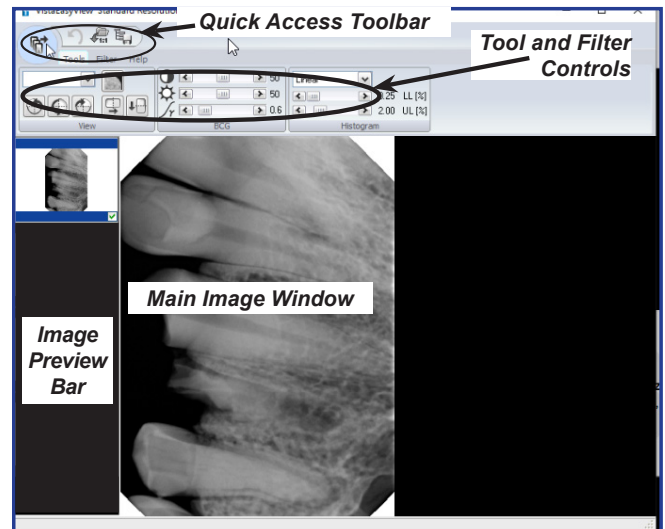
> ⚠️ Filter settings are applied automatically by default. Since the filter applied to the image is permanent once it is sent out of VistaEasy, images must be carefully reviewed before passing to third party software applications.

Tools and filters for image editing The tools and filters that are necessary for editing images are visible in VistaEasyView Main Image window.

Tool – View Controls

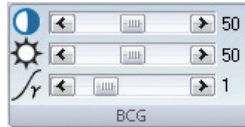**Increase / Decrease:** Provides pull-down menu for zoom-factor selection.

Rotate image: Allows image to be turned by 90° to the left or right or by 180°.

Mirror image: Allows image to be flipped horizontally or vertically.

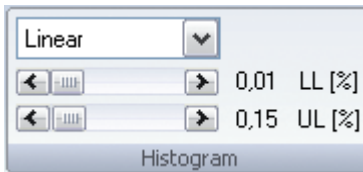**Tool – BCG Controls
(Brightness, Contrast, Gamma)**

Contrast: The contrast of the recording can be adjusted with the slide control.

Brightness: The brightness of the recording can be adjusted with the slide control.

Gamma: The gamma values of the recording can be adjusted with the slide control.

Tool – Histogram Control

This control allows the adjustment of grey values using histogram optimization.

The calculation of the evaluation curve can be selected from original, linear, sqrt, log, quad, S-Curve types. The lower and upper percentage limit of the grey values can also be truncated by up to10%. This eliminates the grey values in this range.

Filter:

Intra, Ceph and Pano Controls

Intra, Ceph, Pano Noise Reduction: Matches outlier pixels to their neighboring pixels.

Intra, Ceph, Pano Fine: General sharpening filter which enhances structures of 2 line pairs per mm.

Ceph 1: Enhances structures of 0.75 line pairs per mm with strong attenuation of high frequencies.

Ceph PA: Enhances strongly structures of 0.5 line pairs per mm with very strong attenuation of high frequencies.

Histogram: optimization

Panorama Standard: Enhances structures of 0.25 line pairs per mm with strong attenuation of high frequencies.

3.5 **VistaEasy View.** Some software program require VistaEasy View to be activate.

a. Activate VistaEasy View

1. Click the Wrench Icon button and observe that the VistaEasy changes showing VistaEasy setting options.

2. Select Activate VistaEasy View option and make sure that a check appears in the check box.

3. Click Close configuration to return to the desktop.
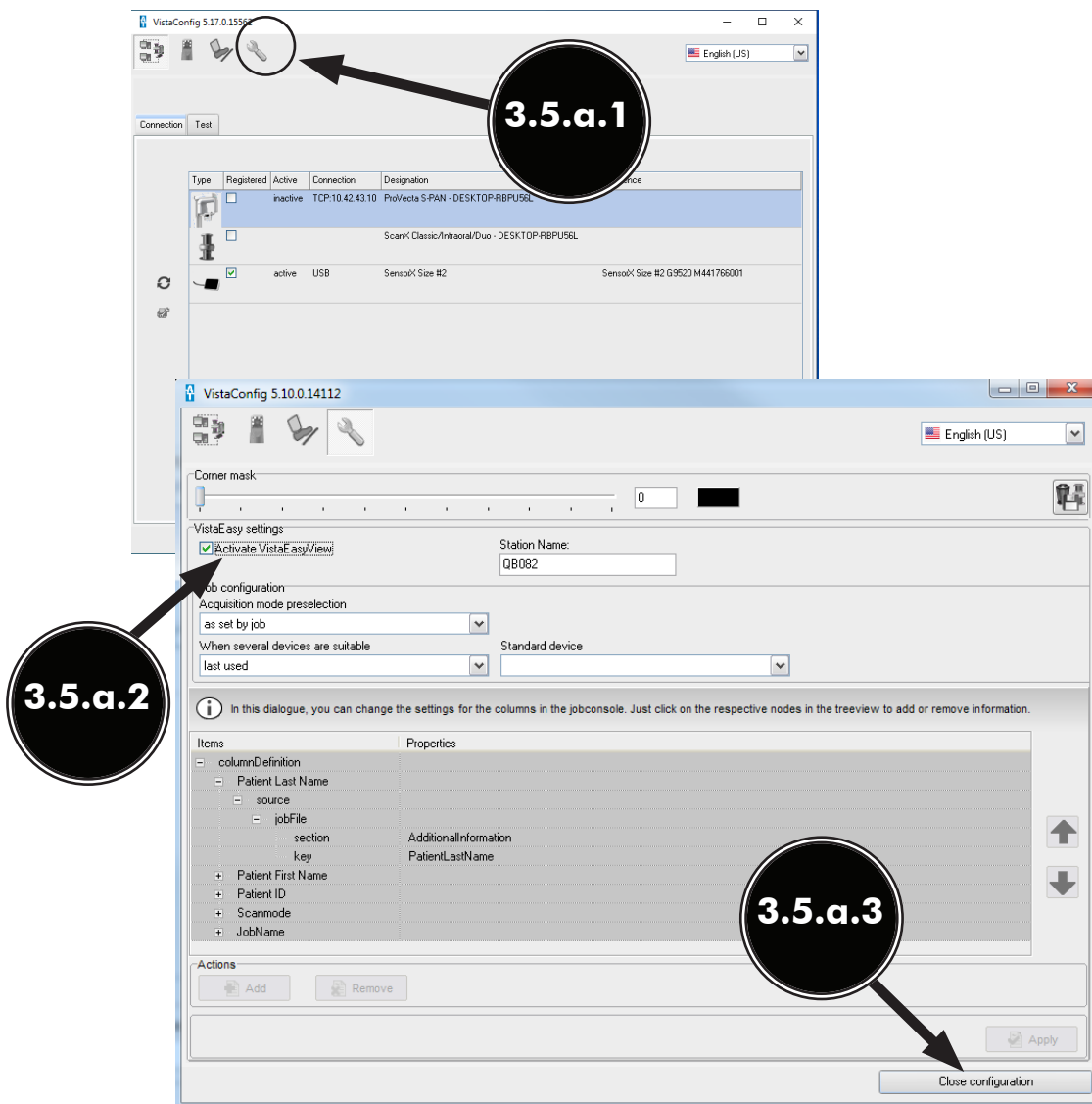
4.1.   Apteryx Setup for SensorX.
The following provides setup instructions for Apteryx imaging software, XrayVision Version 4.0. This software allows SensorX to acquire images via TWAIN.

4.1a.   Make sure that the device drivers have been installed and the sensor is properly configured. Refer to the VistaEasy Installation, section 3, as necessary. Verify the SensorX is connected.

4.1b.   Start the application and observe that the **Apteryx** main window displays. Perform the steps of paragraph 4.1c when running **Apteryx** for the first time. Otherwise, proceed to paragraph 4.1d to acquire images via the installed SensorX.

4.1c.   Predefined **Apteryx** layouts and image processing TWAIN source that the SensorX device uses to capture images must be selected or edited. Perform the following steps to match **Apteryx** scan layouts with **TWAIN** sources as necessary.

1. Click the *Open Patient* tab and select a patient. **Apteryx** returns to the main window.

2. Select *Capture Layout Images* tab and observe that the *Select Layout* window opens.

3. Choose the desired layout to edit. Select *Edit Layout Definitions*.

4. Observe that the *Layout Definition* window opens and select layout from menu.

5. If necessary, change the source device selection shown on each layout tile by right clicking the tile and selecting SensorX from the *Taken From:* drop down list. Repeat for each tile in the selected layout.

6. Continue in the *Layout Definition* window and select *SensorX TWAIN* source for the capture device.   Click the *Done* button to save the source selection.

7. Observe that the pop up *Layout Modified* window opens. Click the **Yes** button to Return to the **Apteryx** main window.
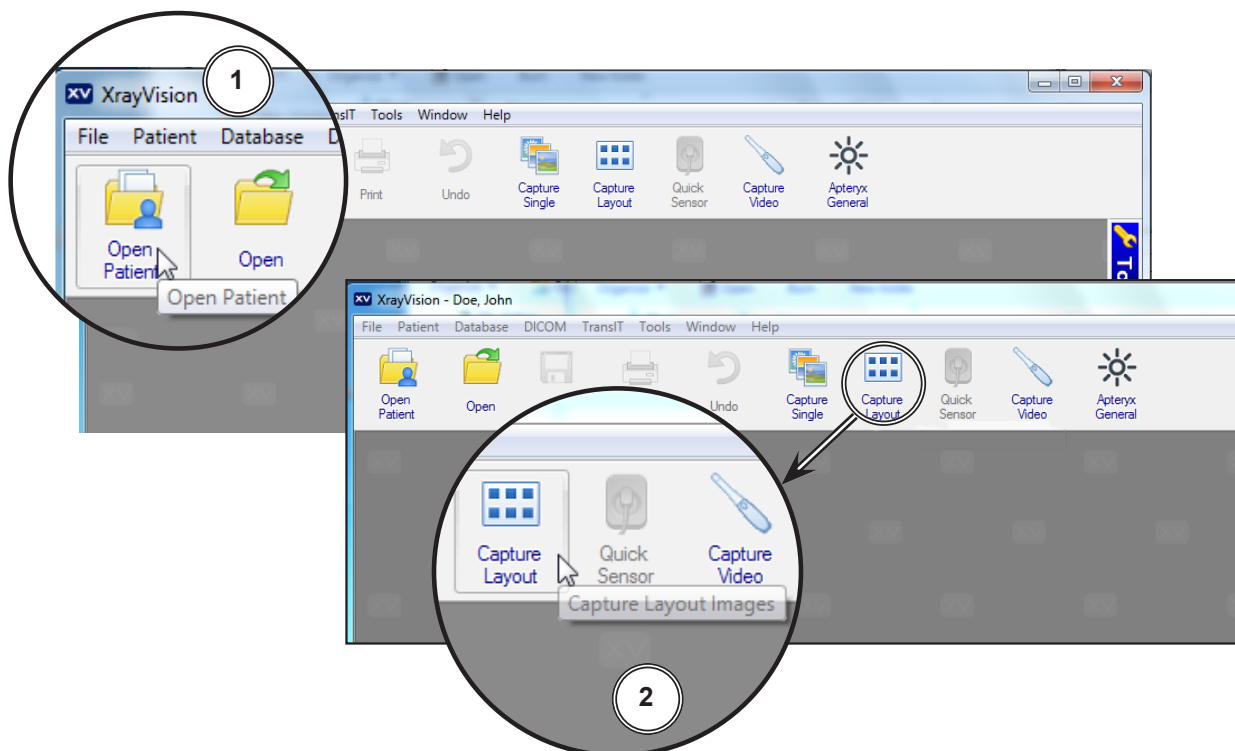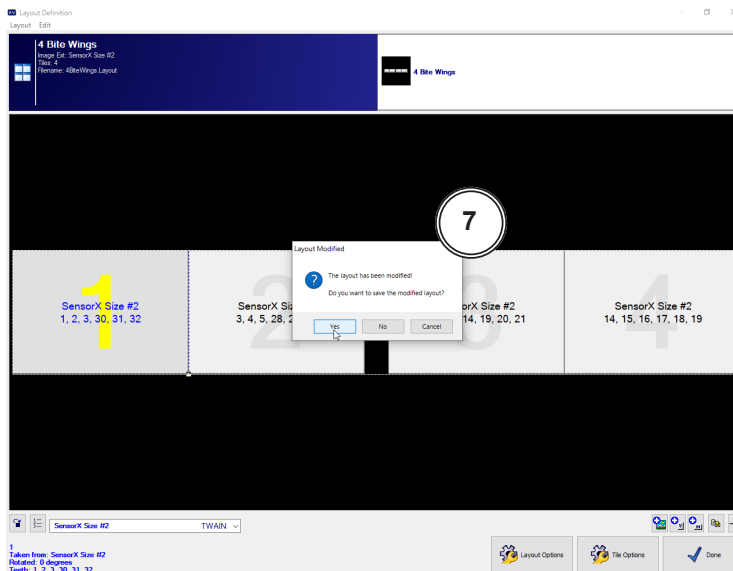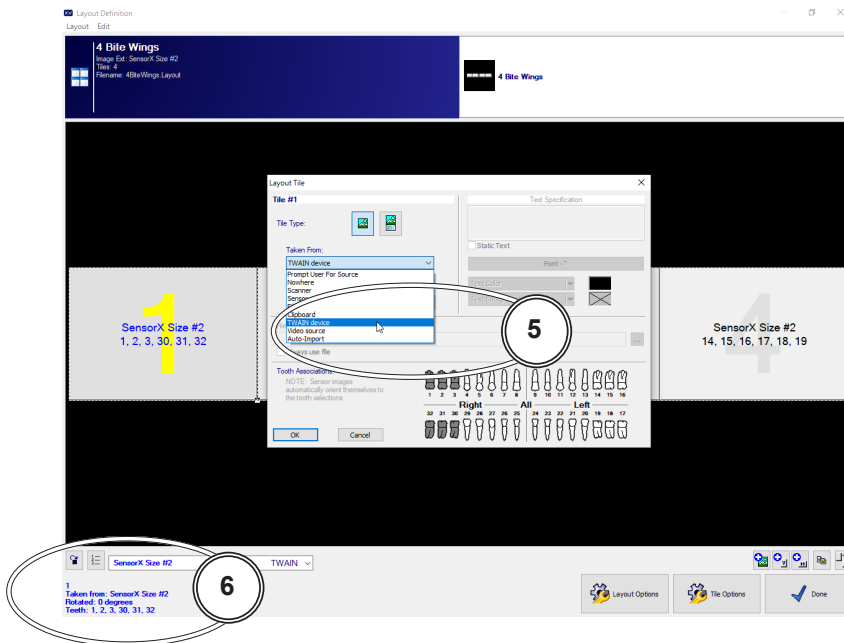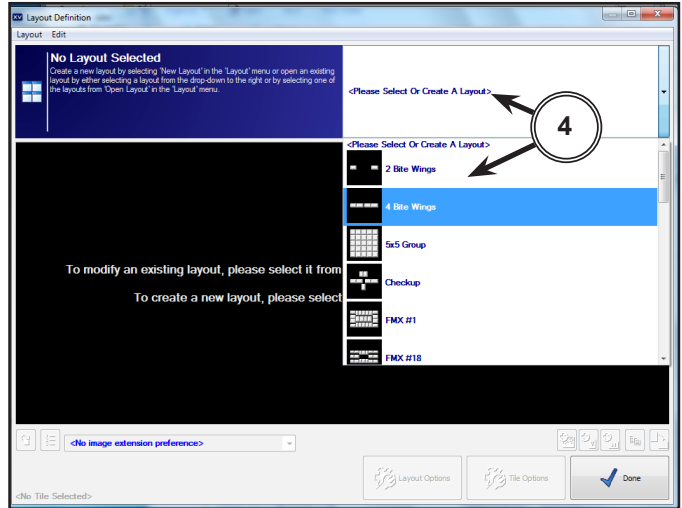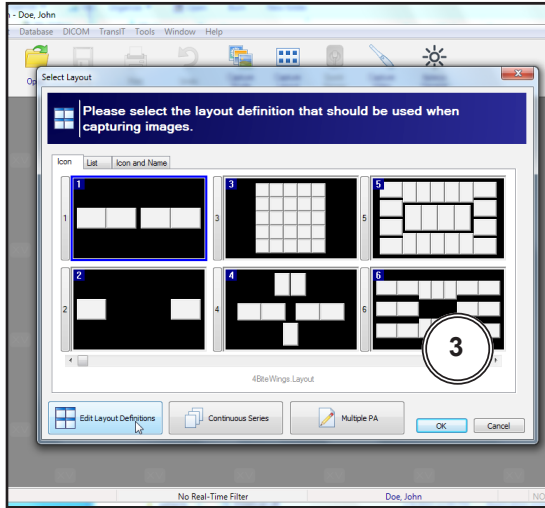
4.1d. Acquire images via the installed SensorX with **Apteryx** by performing the following.

1. Click the **Open Patient** tab to select a patient. Return to the **Apteryx** main window.

2. Select **Capture Layout Images** tab and observe that the **Select Layout** window opens.

3. Select layout configured in step 4.1.c and click the **OK** button. Observe that the **Capture Layout** window opens.

4. From the **Capture Layout** window, select **Capture Series** and observe that the **TWAIN Status Preview** window opens.

5. Acquire images using the **SensorX TWAIN** source for the capture device as set by paragraph 4.1c.

6. Observe that the VistaEasyView Main Image window opens once the first image is acquired. The image or images will remain until processed. Refer to paragraph 3.4, Using the TWAIN Interface (Source) with Third-Party Applications.

> **NOTE:** If the resultant image is displayed mirrored, refer to Appendix A for the associated Image Mirror Control instructions to adjust image orientation for display as needed.
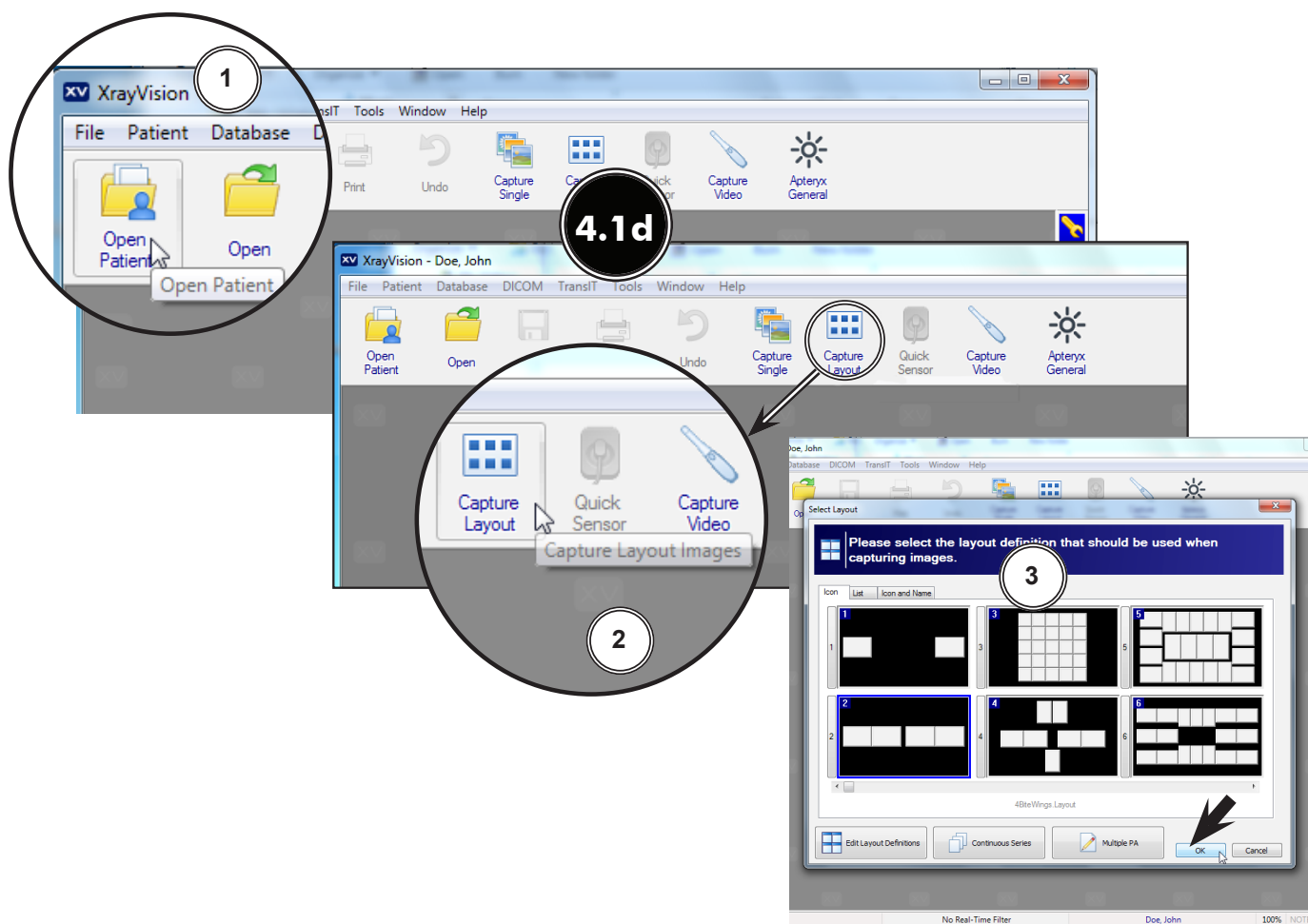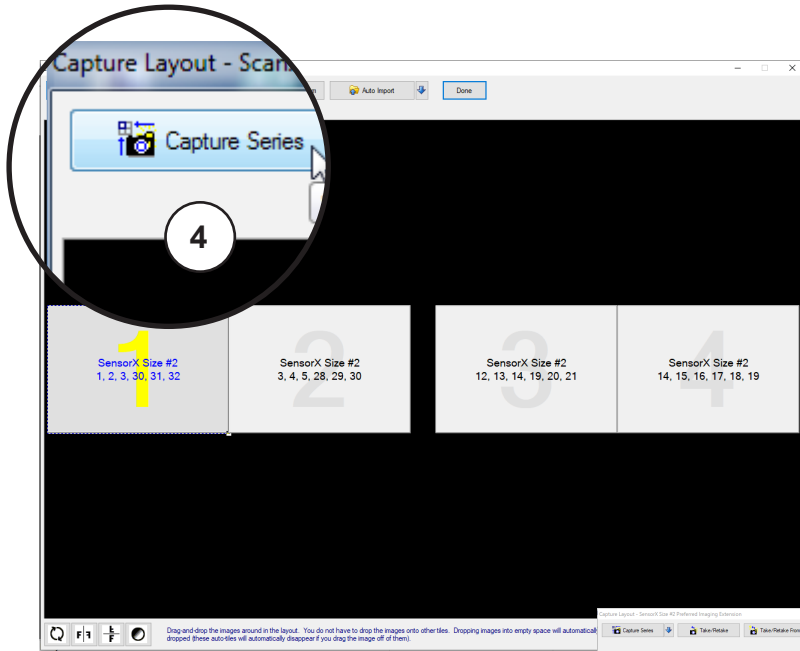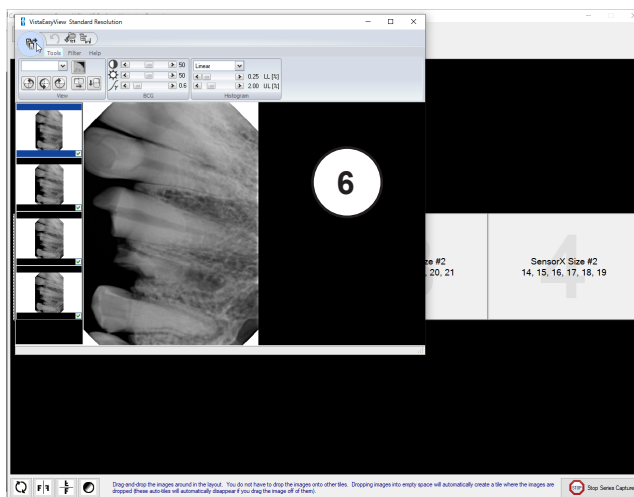
**TWAIN Status
Preview Window**
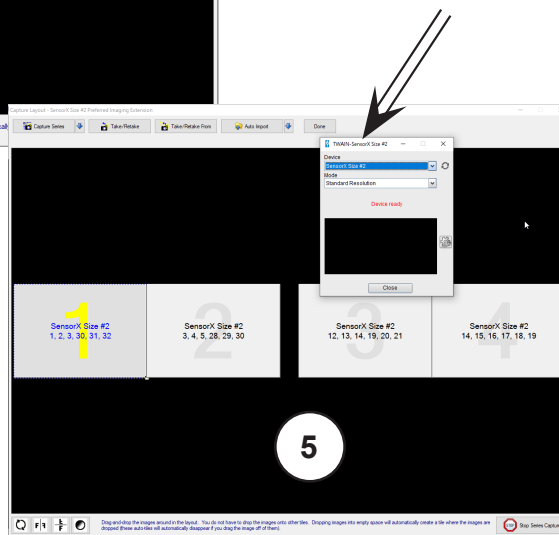
**VistaEasyView Main
Image Window**

4.2. **Dexis 10 Setup for SensorX.**
The following provides setup instructions for **Dexis** imaging software. This software allows SensorX devices to acquire images via TWAIN.
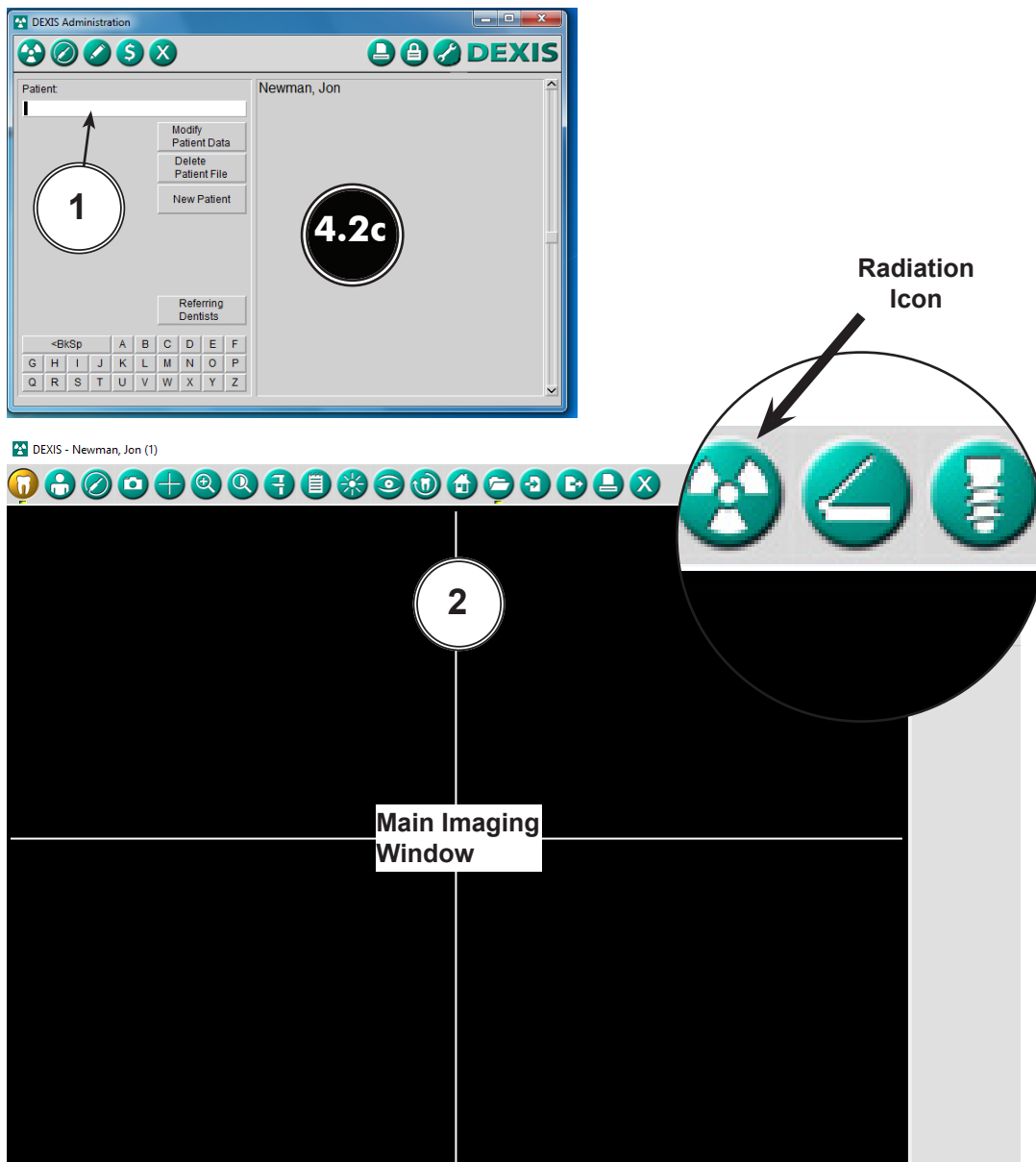
4.2a. Make sure that the device drivers have been installed and the sensor is properly configured. Refer to the VistaEasy Installation, section 3, as necessary. Verify the SensorX is connected.

4.2b. From the **DEXIS Administration** window, select the *Tool Icon* from the main tool bar and observe that the **Preferences** window opens. As shown below, perform the following steps A & B to set up the TWAIN device. Select the **OK** tab to save selections and return to the **DEXIS Administration** window.
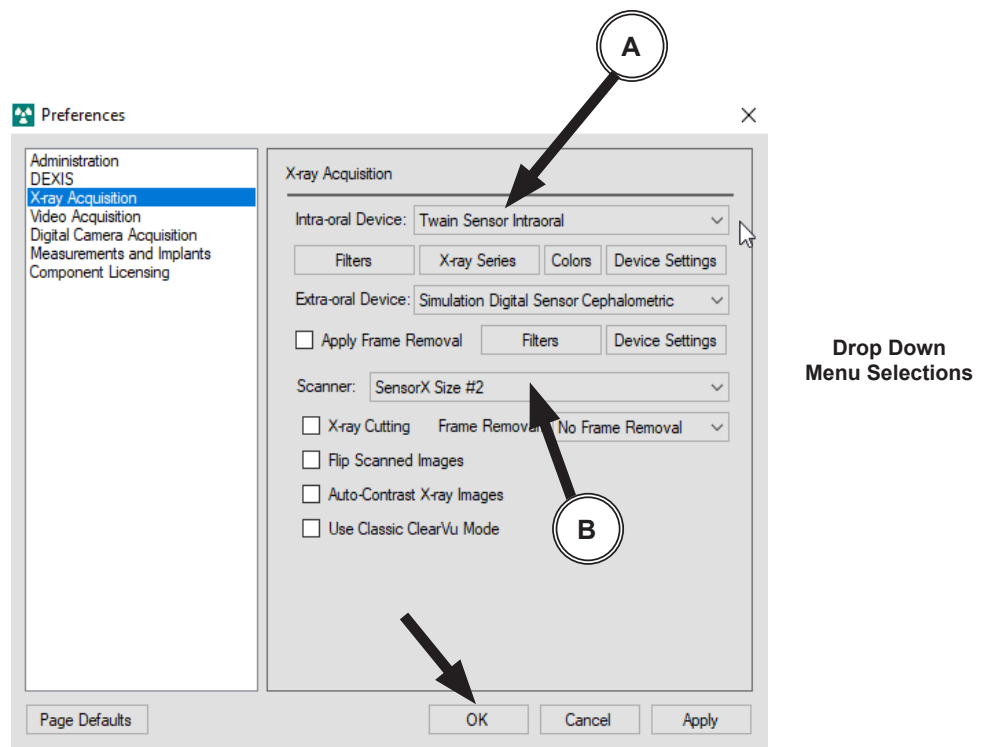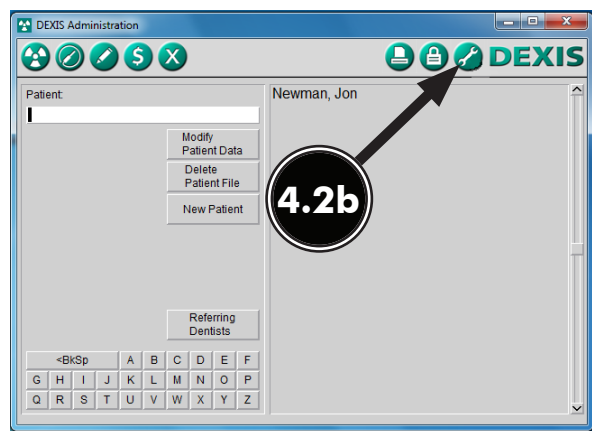
4.2c. Perform the image acquisition procedure provided below for **TWAIN** acquisition as set in step 4.2b.

1. Start an image acquisition by selecting a patient (existing or newly created) as necessary and observe that the **Main Imaging** window opens.
2. Select the Radiation icon from the right of the tool bar of the **Main Imaging** window.
3. Observe that the *Intraoral Sensor* pop up window opens.
4. Choose the desired image series to begin image acquisition process**.**
5. Observe the *SensorX-TWAIN interface* window. Begin taking desired X-ray exposures.
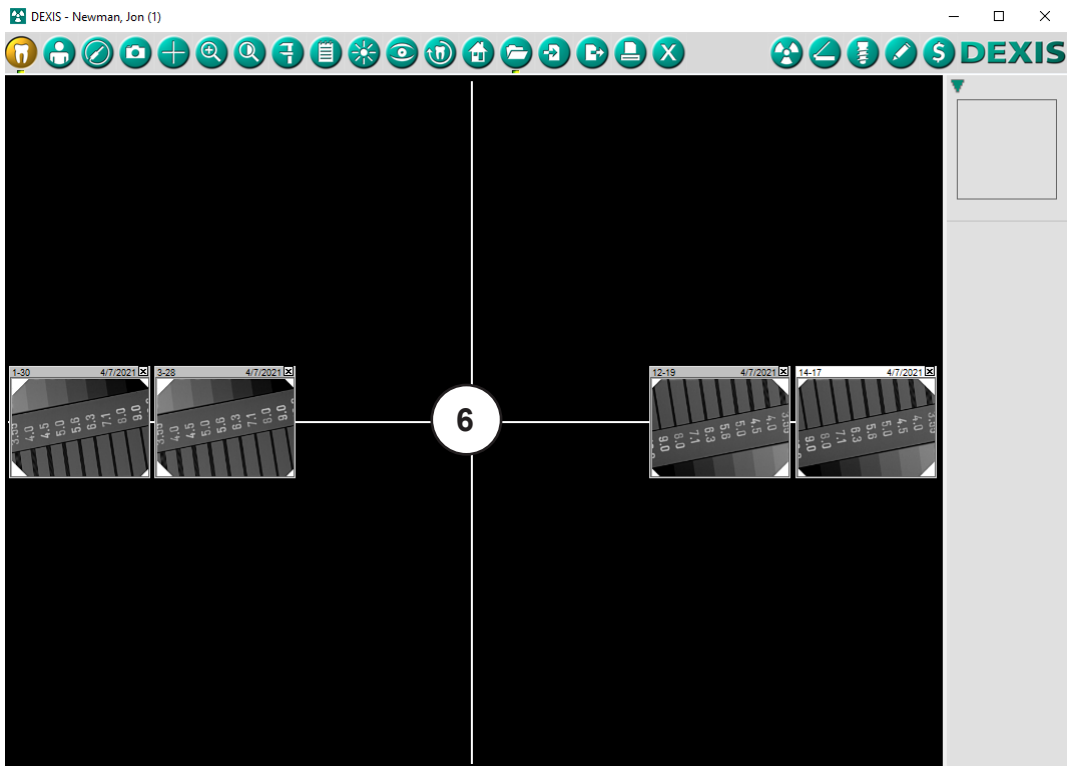6. Upon completion of the image series, the X-ray will automatically appear in **Main Imaging** window.

> **NOTE:** If the resultant image is displayed mirrored, refer to Appendix A for the associated Image Mirror Control instructions to adjust image orientation for display as needed**.**

3

4
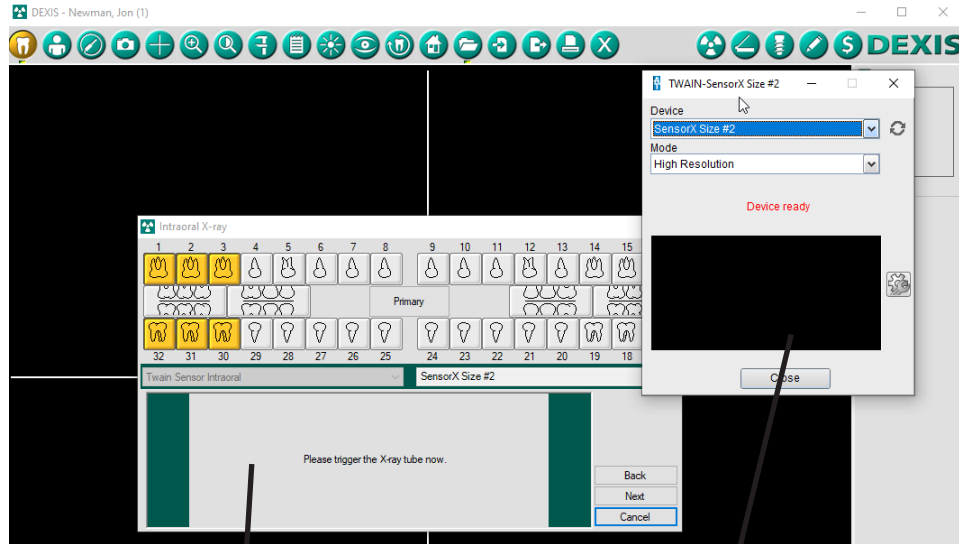
**Intraoral
Sensor Window**
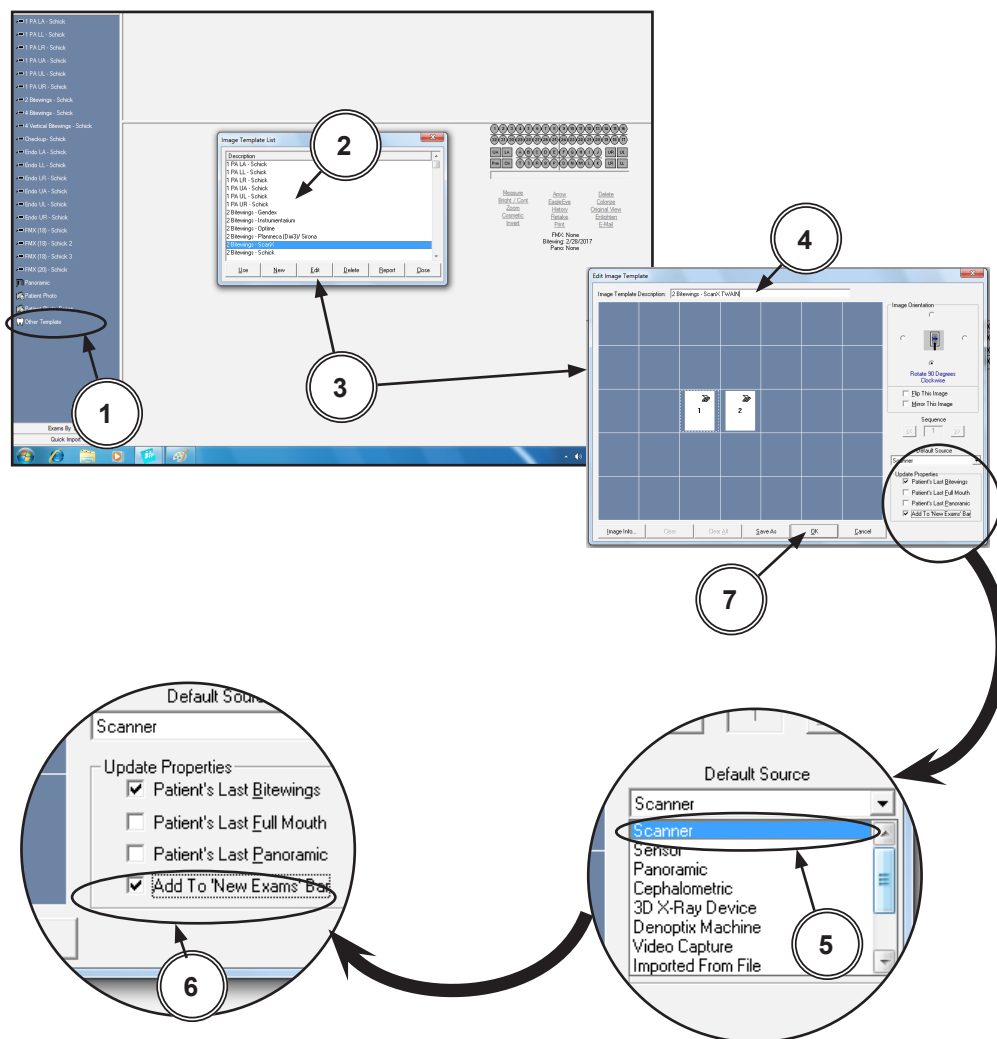
5

**SensorX TWAIN
Interface Window**

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4.3. **Eaglesoft 20 Setup for SensorX.** The following provides setup instructions for **Eaglesoft** imaging software. This software allows SensorX devices to acquire images via TWAIN.

4.3a. Make sure that the device drivers have been installed and the sensor is properly configured. Refer to the VistaEasy Installation, section 3, as necessary. Verify the SensorX is connected.

4.3b. Setup the SensorX to work with TWAIN in **Eaglesoft** as follows.

1. Select *File* to open a drop down list of operational functions.

2. Select *Preferences* and observe a new window opens.

3. Select the **X-ray** tab.

4. Check the *"use scanner default interface"* check box.

5. Select the *Scanner* tab and observe that the **Select Source** pop up window opens.

6. Highlight the *SensorX* from the source list.

7. Click the *Select* button to select the TWAIN option as the source module and return to the **Preferences** window.

8. Select **OK** in the upper right hand corner to return to the main program window. The application is now set to acquire images via TWAIN.

4.3c. Acquire an image from the SensorX by performing the procedures provided below. See paragraph 4.3d to reference an overview on how to create/modify templates.

1. Start image acquisition by selecting a patient (existing or newly created).

2. Select the **Vw Images** icon and observe that the **Advanced Imaging** window opens.

3. Select the **New Exams** tab from the lower left of the window and observe that a listing of template options appear.

4. Select the pre-designed template option for a specific exam.

5. Select the **Acquire** icon and observe that the *SensorX-TWAIN interface* opens.

6. Begin taking desired x-ray exposures.

   NOTE: If the resultant image is displayed mirrored, refer to Appendix A for the associated Image Mirror Control instructions to adjust image orientation for display as needed.
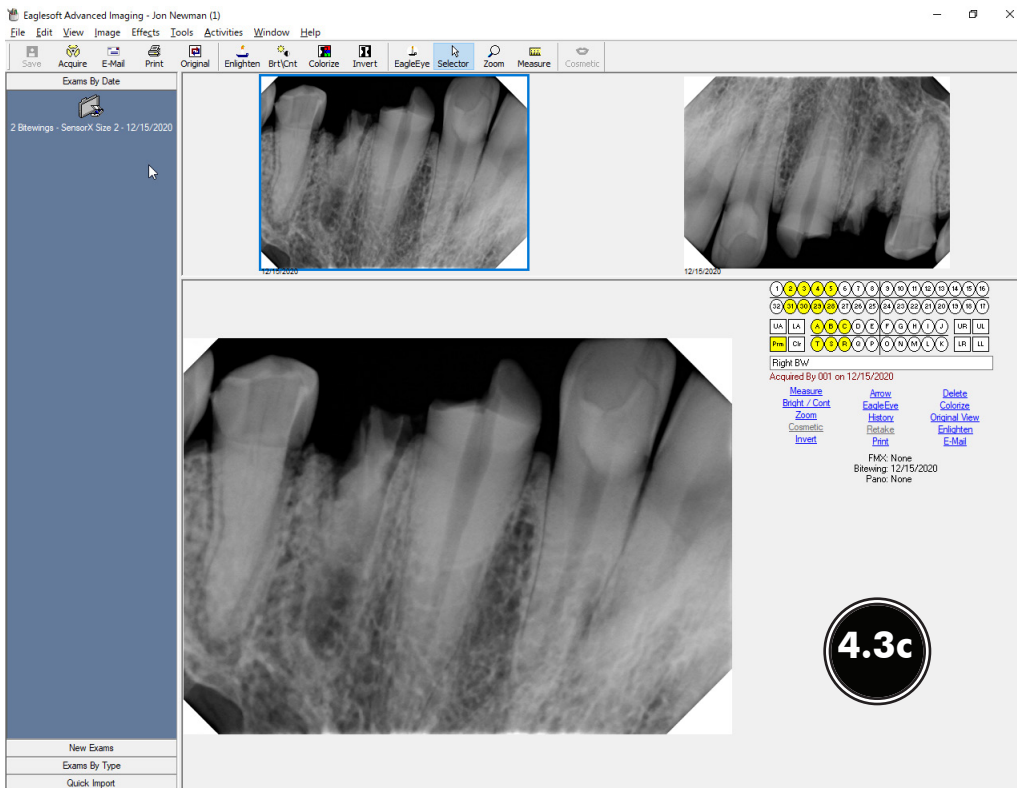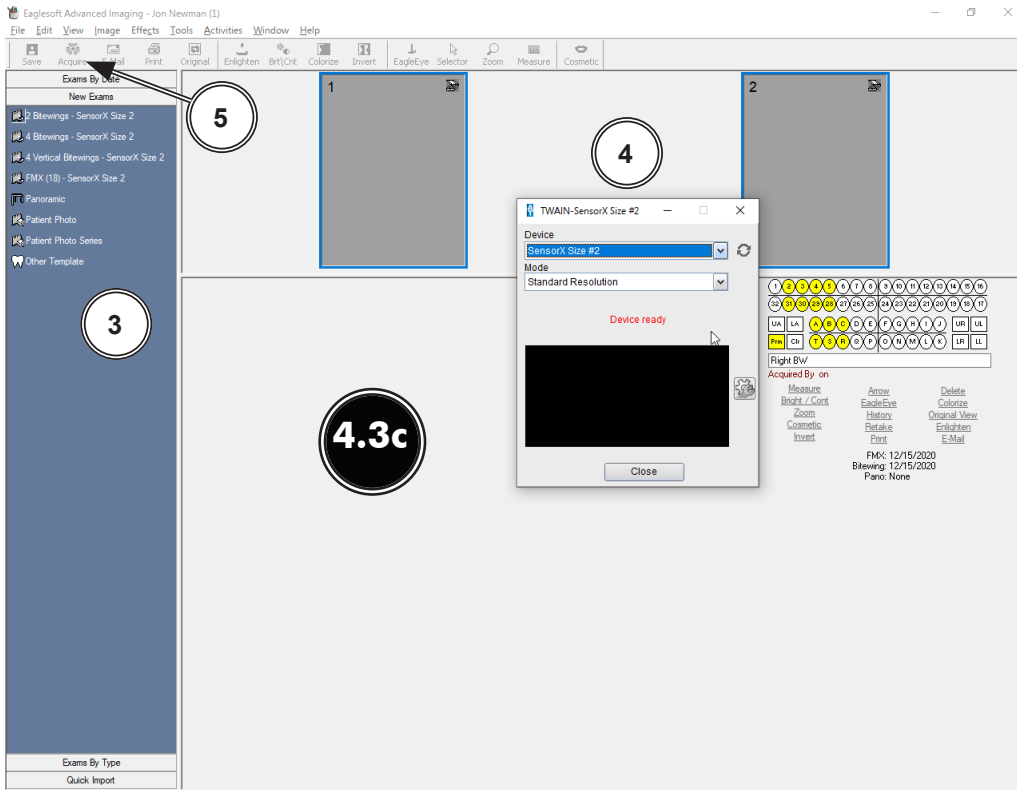
Note: Refer to **Eaglesoft** documentation for detail description for adding and configuring of user specific templates.

4.3d. Add/configure a template by performing the following steps.

1. Select the **Other Template** listing from the lower left of the window.

2. Observe that a **Image Template List** pop up window appears with a template listing. Select desired SensorX template from list.

3. Select the **Edit** tab from the lower center of the pop up window and observe that the **Edit Image Template** window appears. Modify template for SensorX as required.

4. Rename the template as desired by changing the **Image Template Description** input located in the upper center of the window.

5. Make sure that **Scanner** is selected for the **Default Source** drop down menu located in the lower right of the window.

6. With **Scanner** selected, make sure the **Add To New Exams Bar** check box is checked.

7. Accept the SensorX specific pre-designed template addition by selecting the **OK** button located in the bottom of the **Edit Image Template** window.

4.4. **KODAK Dental Imaging (KDI) 6 Setup for SensorX** The following provides setup instructions for **KDI** imaging software. This software allows SensorX to acquire images via TWAIN. Set up **KDI** as follows:

4.4a. Make sure that the device drivers have been installed and the sensor is properly configured. Refer to the VistaEasy Installation, section 3, as necessary. Verify the SensorX is connected.

4.4b. Start the application and observe that the **KDI** window displays.

4.4c. Perform the steps of paragraph 4.4d when running **KDI** for the first time. Otherwise, proceed to paragraph 4.4e to acquire images via the installed SensorX.

4.4d. Setup the SensorX device to work with **KDI** for the first time by performing the following.

1. Select **File** to open a drop down list of operational functions.

2. Select **TWAIN** from the menu list

3. Choose **Select source...** and observe that the **Select Source** window opens.

4. Highlight the appropriate SensorX from the source list.

5. Click the **Select** button to set SensorX as the source for the capture device. Observe that the **Select Source** window closes and the **KDI** window returns.

6. Proceed to paragraph 4.4e to acquire images via the installed SensorX.
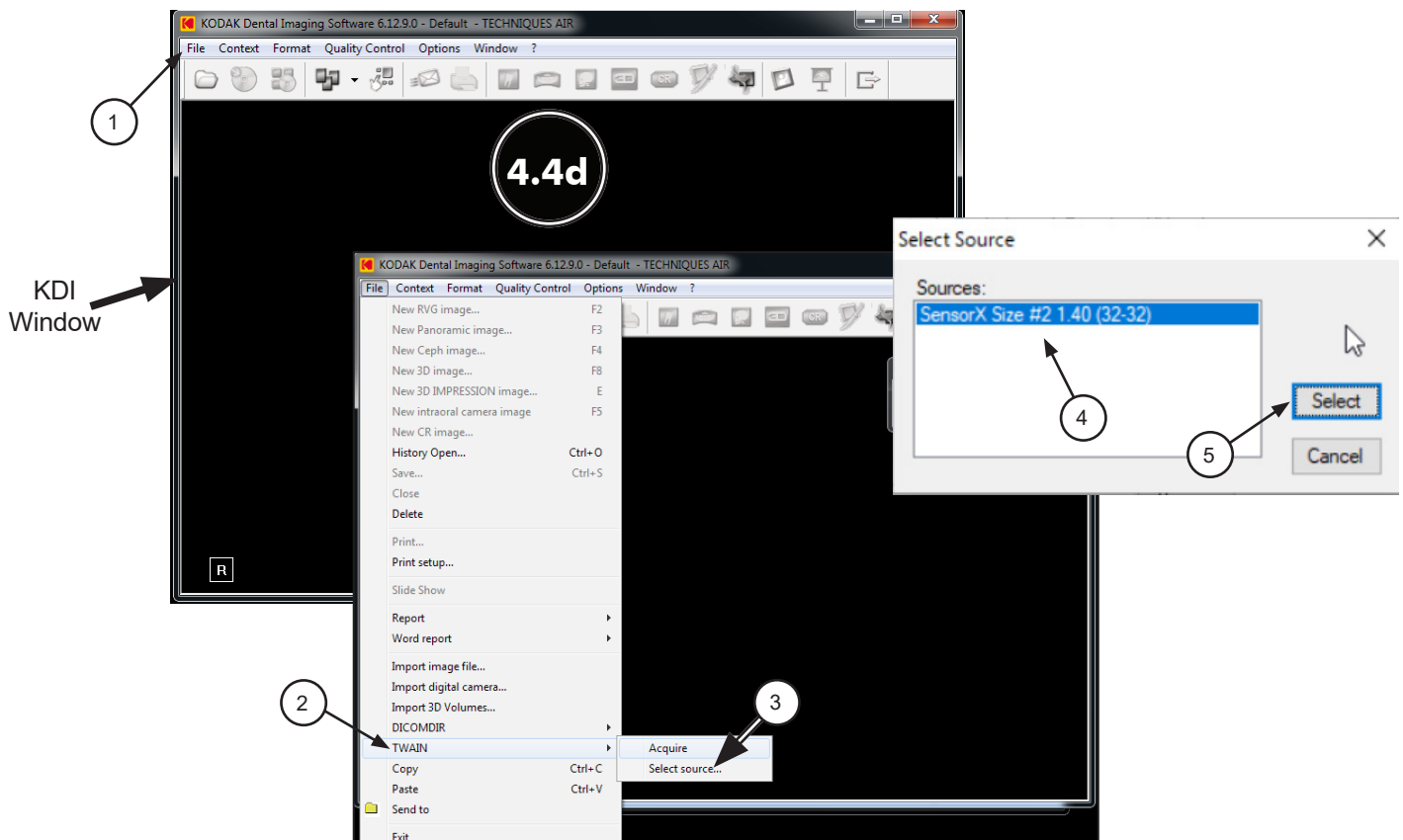
4.4e. Acquire images using *KDI* by performing the following procedure.

1. Click the **Acquisition Icon** located on the top tab of the *KDI* window.

2. Observe that the ***SensorX-TWAIN interface*** pop up window opens.

3. Begin taking X-ray exposures.

4. Observe that the VistaEasyView Main Image window opens once the first image is acquired. The image or images will remain until processed. Refer to paragraph 3.4, Using the TWAIN Interface (Source) with Third-Party Applications.

NOTE: If the resultant image is displayed mirrored, refer to Appendix A for the associated Image Mirror Control instructions to adjust image orientation for display as needed.
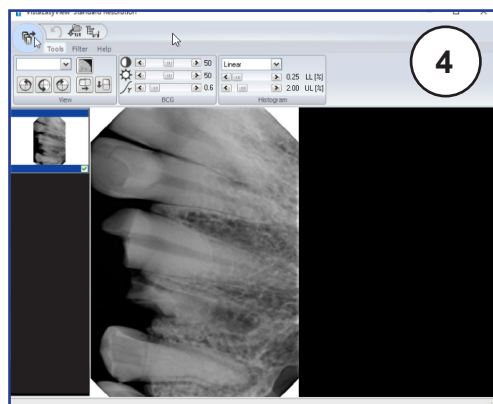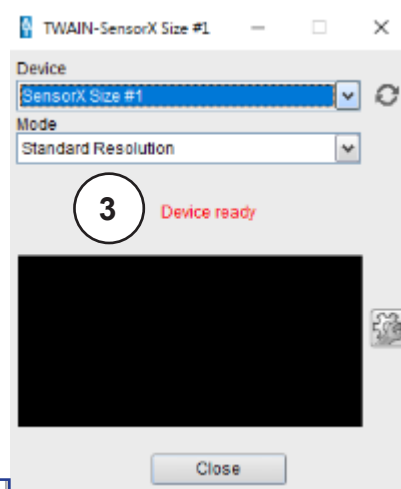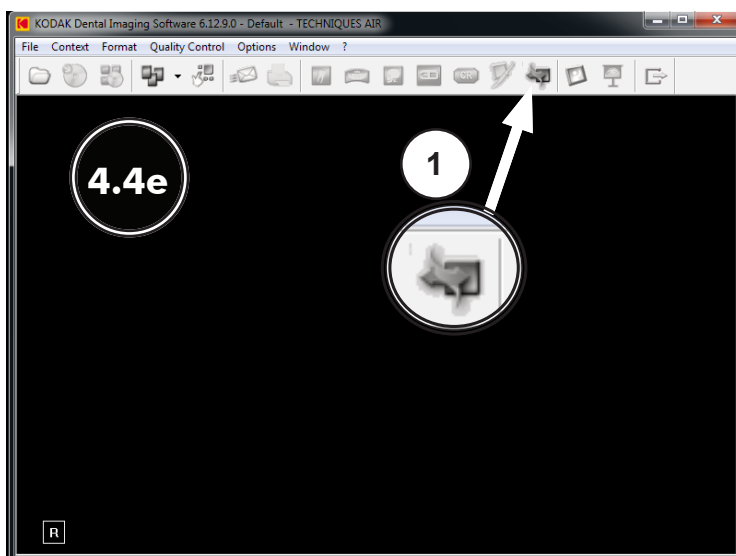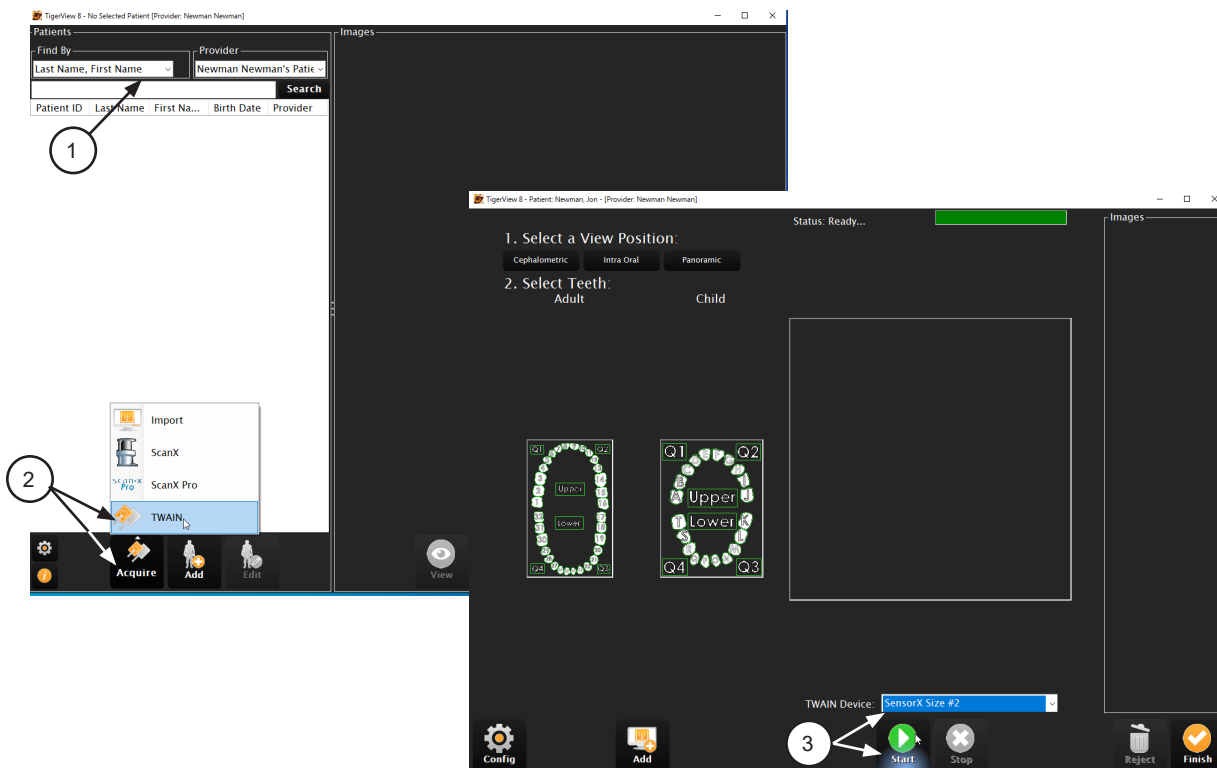

VistaEasyView Main Image Window

4.5. *Tigerview* **8 Setup for SensorX.** The following provides setup instructions for Tigerview imaging software. This software allows SensorX devices to acquire images via TWAIN.

4.5a. Make sure that the device drivers have been installed and the sensor is properly configured. Refer to the VistaEasy Installation, section 3, as necessary. Verify the SensorX is connected.

**4.5b.** Acquire images using Tigerview by performing the following procedure.

1. Select desired patient.
2. Click the Acquire tab and then TWAIN.
3. Verify that the **TWAIN Devices** drop down shows *SensorX* selected. With the TWAIN acquisition mode set, select the *Start* button and observe that the *SensorX-TWAIN interface* pop up window opens.
4. Begin the the X-ray exposures.
5. Observe that the VistaEasyView Main Image window opens once the first image is acquired. The image or images will remain until processed. Refer to paragraph 3.4, Using the TWAIN Interface (Source) with Third-Party Applications.
6. Click **Close** the *SensorX-TWAIN interface* window.
7. Click Save on VistaEasyView window. Image will appear within Tigerview. Select Finish.

> **NOTE:** If the resultant image is displayed mirrored, refer to Appendix A for the associated Image Mirror Control instructions to adjust image orientation for display as needed**.**
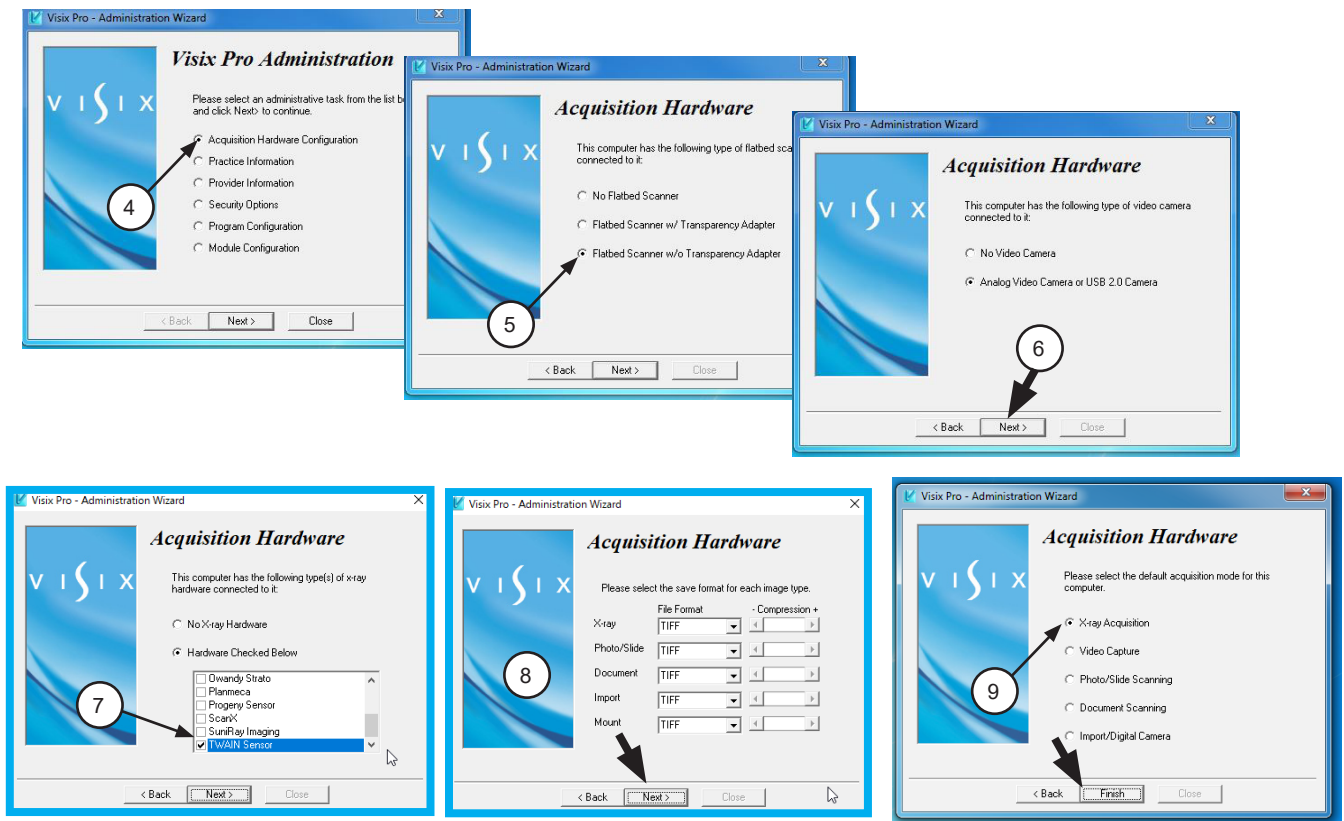
SensorX-
TWAIN
Interface

VistaEasyView
Main Image
window ⑤
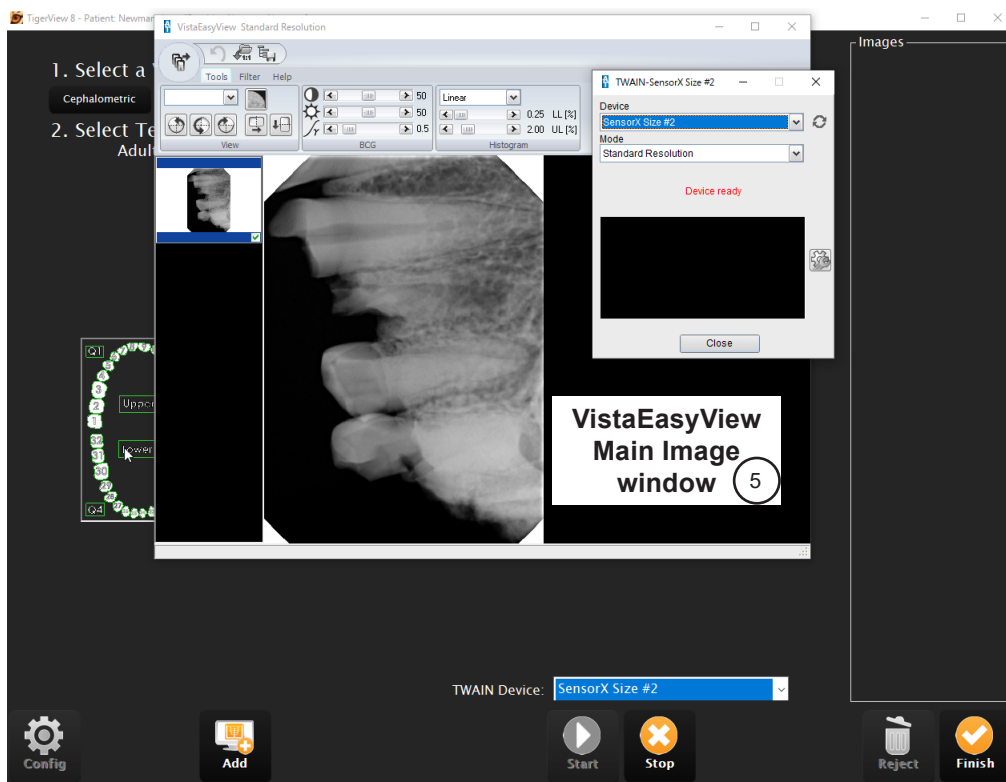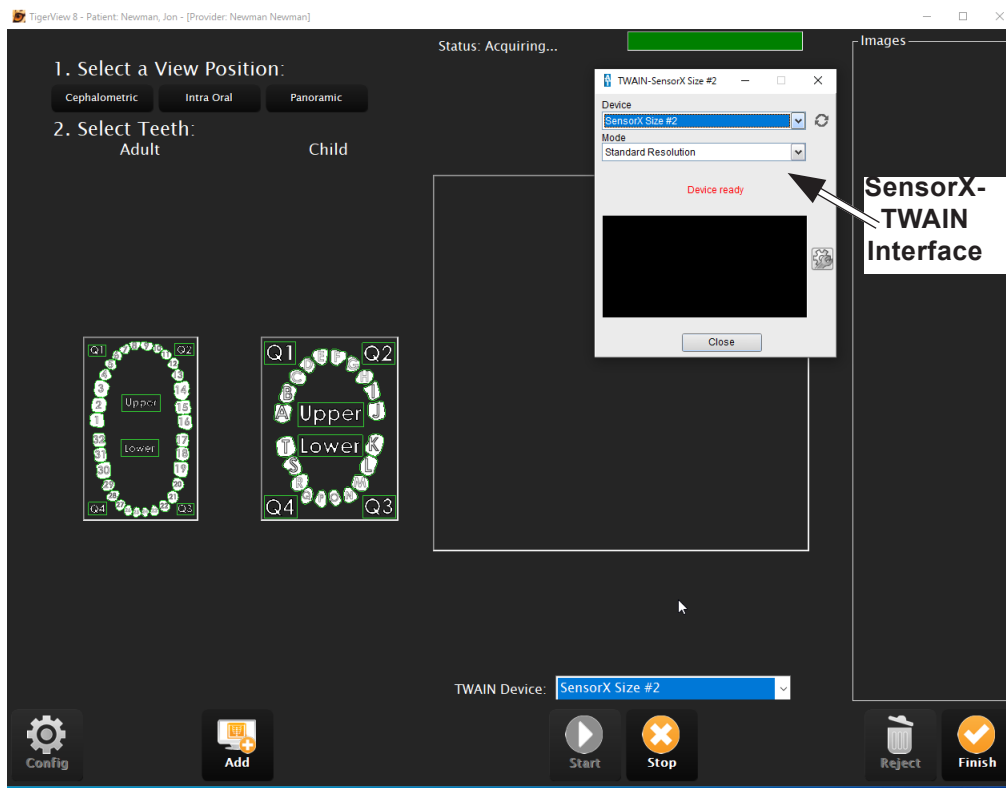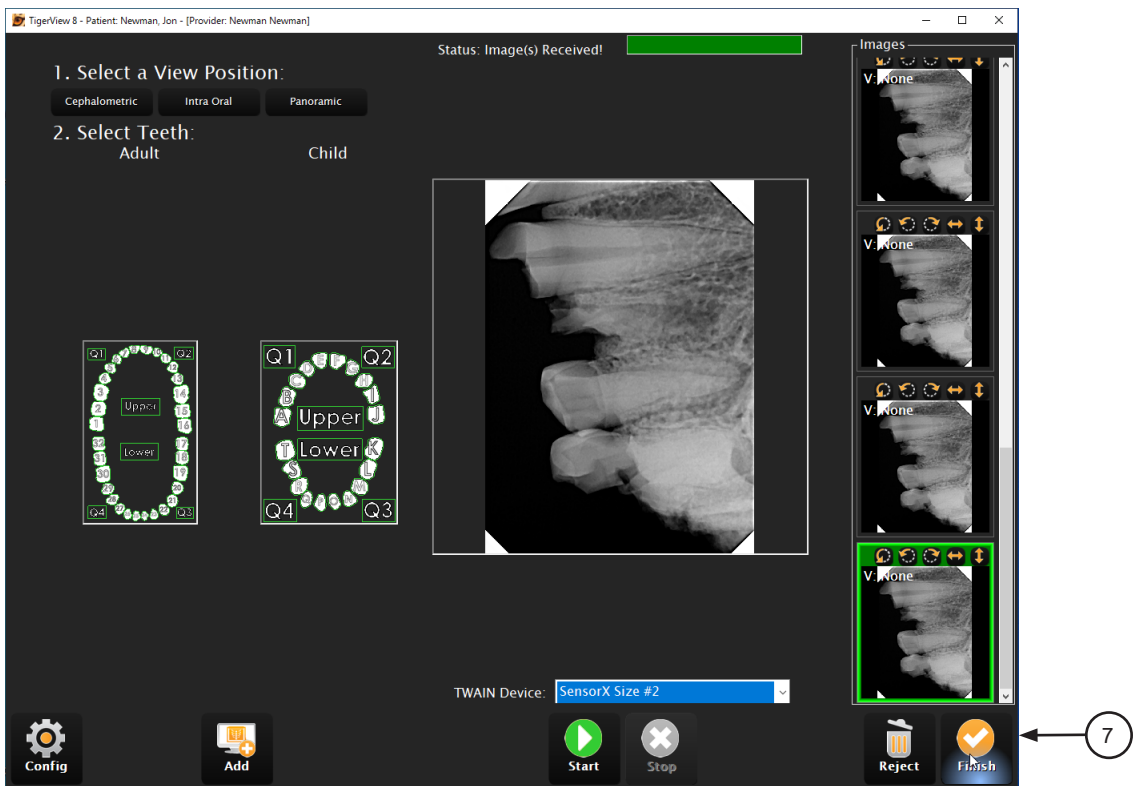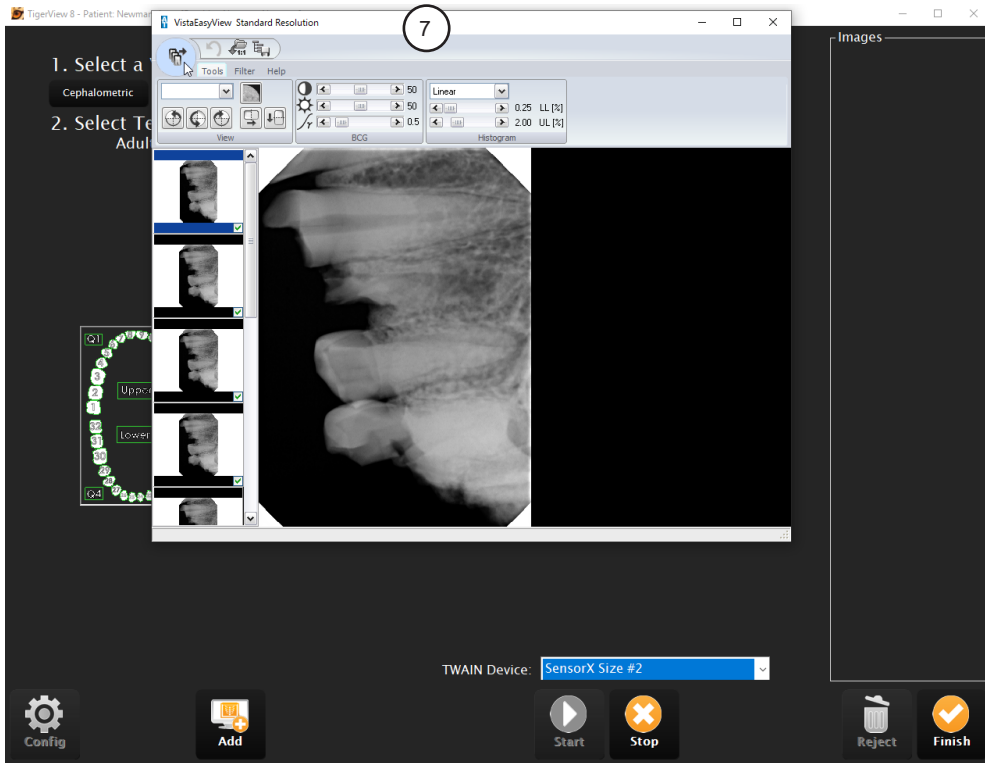
4.6. **VISIX Pro 7 Setup for SensorX.** The following provides setup instructions for **VISIX Pro** imaging software This software allows SensorX devices to acquire images via TWAIN.

4.6a. Make sure that the device drivers have been installed and the sensor is properly configured. Refer to the VistaEasy Installation, section 3, as necessary. Verify the SensorX is connected.

4.6b. Perform the steps of paragraph 4.6c when running **VISIX Pro** for the first time. Otherwise, proceed to paragraph 4.6d to acquire images via the installed SensorX.

4.6c. Setup SensorX to work with **VISIX Pro** for the first time by performing the following.

1. Click the Windows **Start** button and select All Programs from the menu.
2. Select the **Visix** listing and observe that the **Visix Administration** option appears.
3. Click **Visix Administration**, which opens the **Visix Pro Administration** window.
4. Choose **Acquisition Hardware Configuration** and click Next.
5. Select **Flatbed Scanner w/o Transparency Adapter** and click Next
6. No selections are needed in the new window that opens. Just click Next to continue.
7. Select **Hardware Checked Below**, choose **TWAIN Sensor** from the menu and click Next.
8. No selections are needed in the new window that opens. Just click Next to continue.
9. Select **X-ray Acquisition** and click Finish to complete the setup.
10. Proceed to paragraph 4.6d to acquire images via the installed SensorX.

> **NOTE:** If the resultant image is displayed mirrored, refer to Appendix A for the associated Image Mirror Control instructions to adjust image orientation for display as needed**.**

4.6d. Acquire images using Visix Pro by performing the following procedures.

1. Select desired patient.

2. Click Acquire .

3. Set TWAIN acquisition mode by selecting **TWAIN Sensor** from the **Available Devices** drop down listing. Verify that the **TWAIN Devices** drop down shows **SensorX** selected. With the TWAIN acquisition mode set, select the **Start** button and observe that the **SensorX-TWAIN interface** pop up window opens.

4. Begin the desired X-ray exposure.

5. Observe that the VistaEasyView Main Image window opens once the first image is acquired. The image or images will remain until processed. Refer to paragraph 3.4, Using the TWAIN Interface (Source) with Third-Party Applications.

6. Once images are acquired highlight and select the desired images to be saved.

7. Select the Save button.

> **NOTE:** If the resultant image is displayed mirrored, refer to Appendix A for the associated Image Mirror Control instructions to adjust image orientation for display as needed.
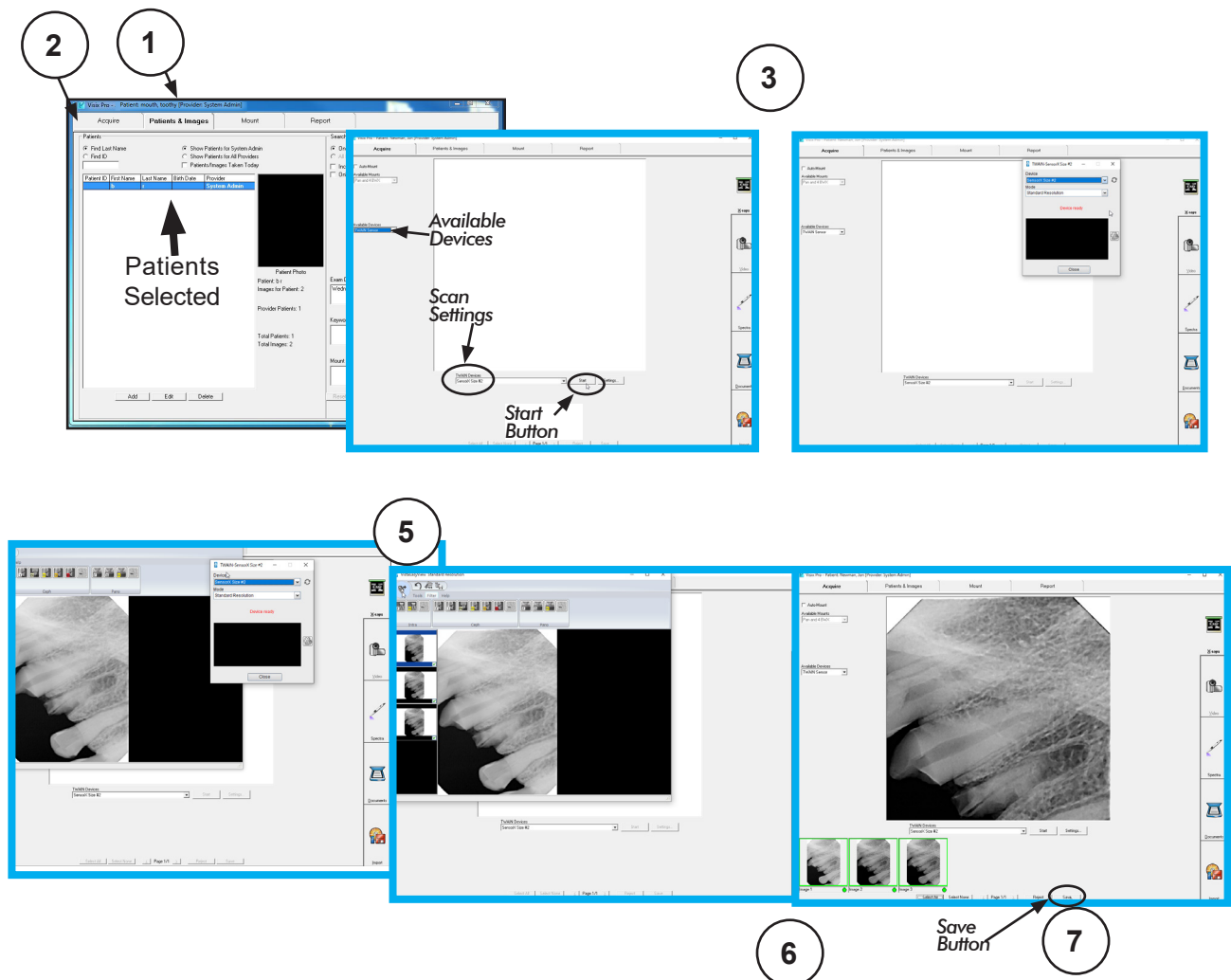
This section provides information on the Image Mirror Control used in each third party imaging software covered in this manual. The mirror control function allows the user the ability to select and adjust image orientation for display as needed. The user should consult the manufacturer user documentation provided with the associated imaging management software for further information specific to image mirror control.
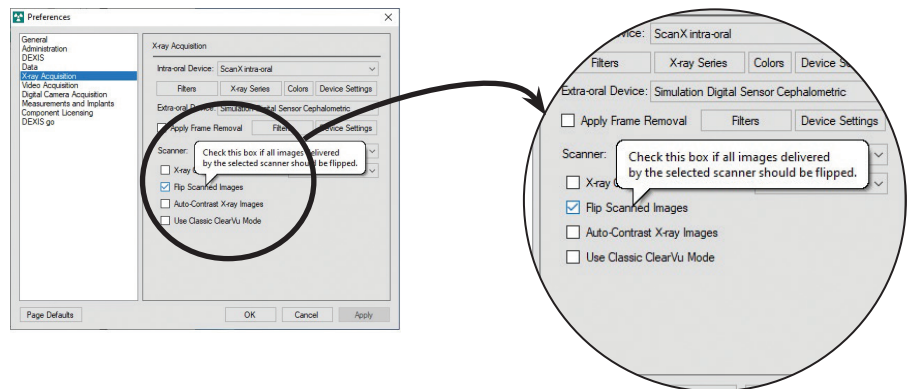
APTERYX

This Image Mirror Control is located on the Toolbox as the **Flip Horizontal** tab shown at right.
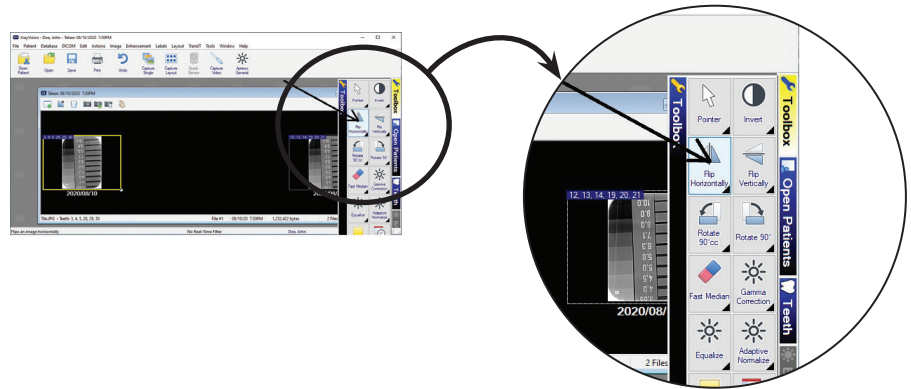

DEXIS

This Image Mirror Control is accessed from the **DEXIS Administration** window, select the *Tool Icon* from the main tool bar and observe that the **Preferences** window opens. Check or deselect the **Flip Scanned Images** to display image as needed.

EAGLESOFT

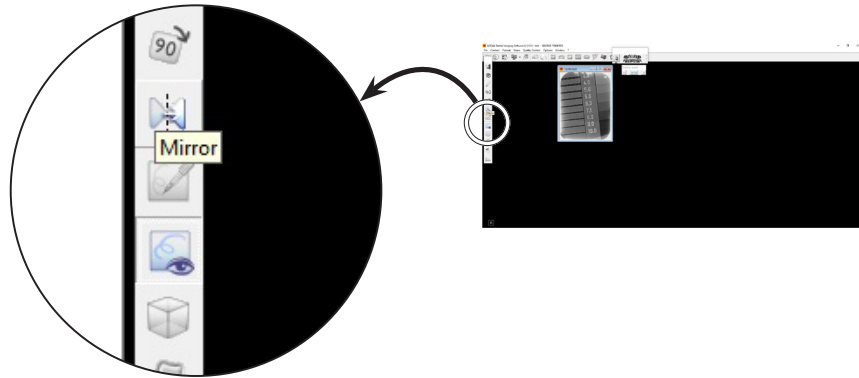This Image Mirror Control is accessed from a drop down list shown when the image is right-click.

Select or deselect **Mirror** from drop down list to display image as needed.
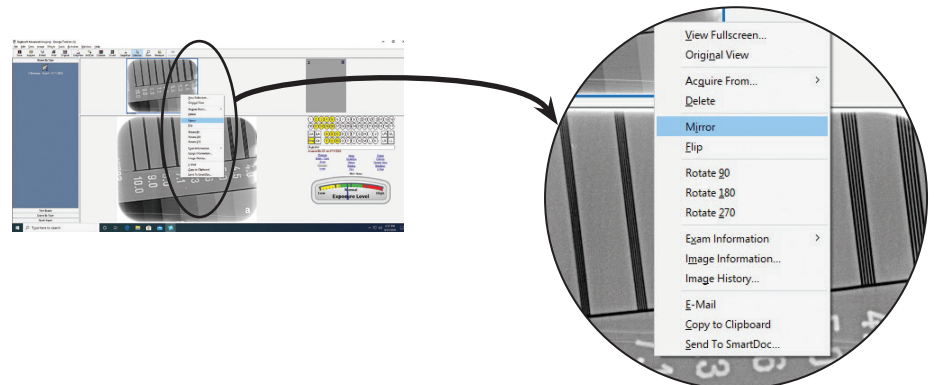
KODAK DENTAL IMAGING

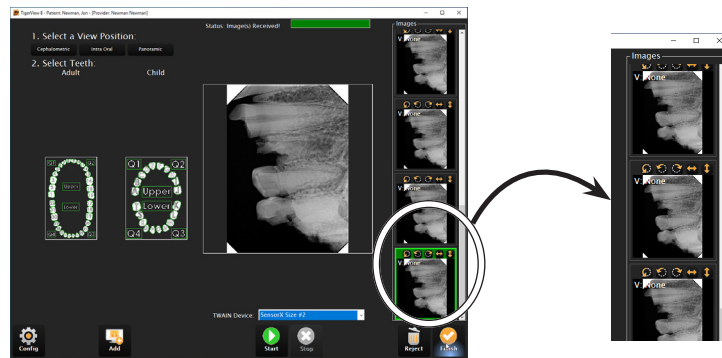This Image Mirror Control is located on the Toolbar as the **Mirror** shown at right.

Select or deselect the **Mirror** tab to display image as needed.

TIGERVIEW

This Image Mirror Control is located on the Toolbar as the **Flip left to right** tab shown at right.
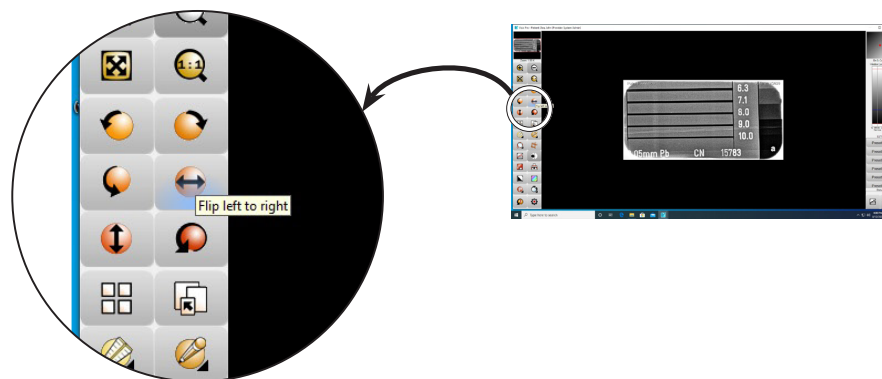
Select or deselect the **Flip left to right** tab to display image as needed.

VISIX PRO

This Image Mirror Control is located on the Toolbar as the **Flip left to right** tab shown at right.

Select or deselect the **Flip left to right** tab to display image as needed.

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- Utility Accessories
- Utility Packages

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- Instrument Cleaner
- Hand Sanitizer & Hand Lotion
- Evacuation System Cleaner
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