SUNI MEDICAL IMAGING INC

SuniRay

DIGITAL RADIOGRAPHY

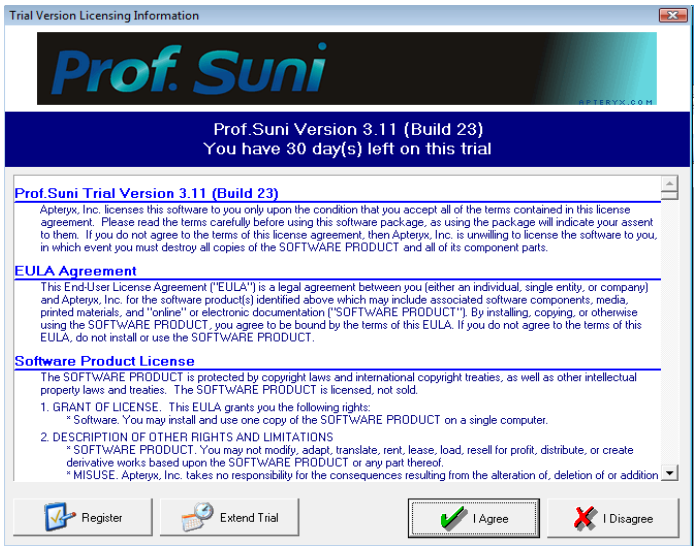
Troubleshooting Guide

Rev. 1.01

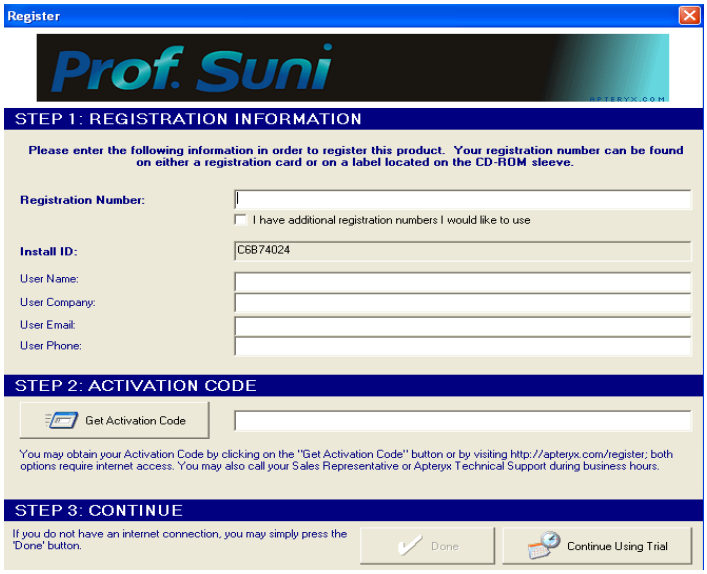
Table of Content

I: Licensing / Registration

After launching ProfSuni from the icon onto your desktop, you will see the following: Trial Version Licensing Information screen.



Click on the **Register** button to get to the next screen:

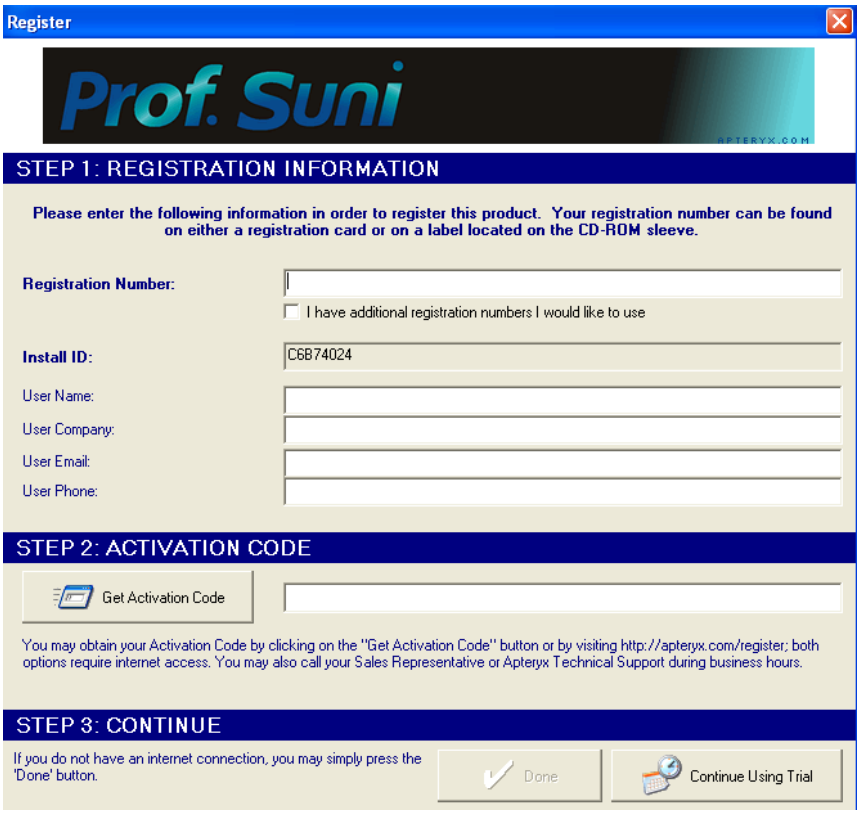


Enter the license 9C50-685A-****, user name information, skip STEP 2: ACTIVATION CODE and click on **DONE** to get into the program.

II: Vista: Repeat Registration Problem – Trial Mode

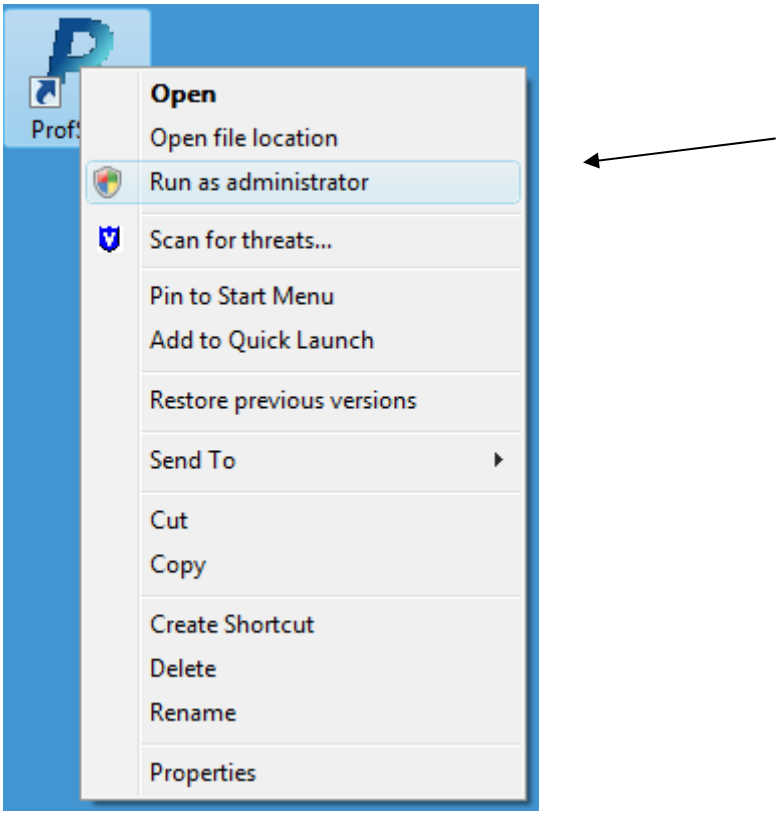
Symptoms:

After registering the software in Vista, and re-launches the program, it asks for registration information again.



Solution:

The problem occurs because the user does not have the administrative privileges necessary to create registration information. To properly register the software, the user should right click on **ProfSuni.exe** and choose **'Run as administrator'**.

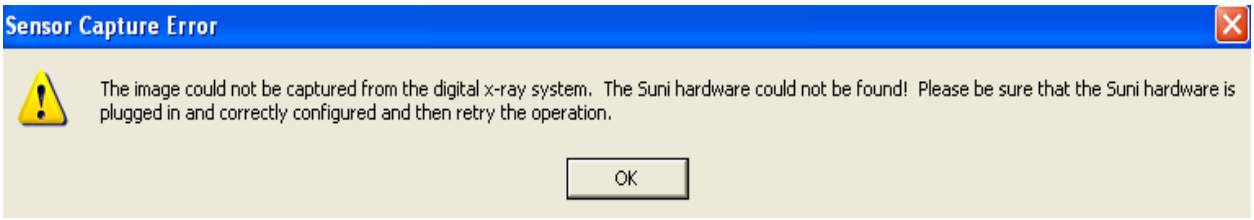


Re-enter the registration number 9C50-685A-****, user information and skip STEP 2: ACTIVATION CODE, then click **DONE** to access the program.

III: Sensor Capture Error – Suni hardware could not be found!

Problem:

After positioning the sensor and activating the unit, the following message is displayed.



This error message is generated due to one of the following situations:

a) The Suniray USB is not recognized by the computer

b) The Suniray USB driver is not installed

c) Insufficient power from the computer USB port

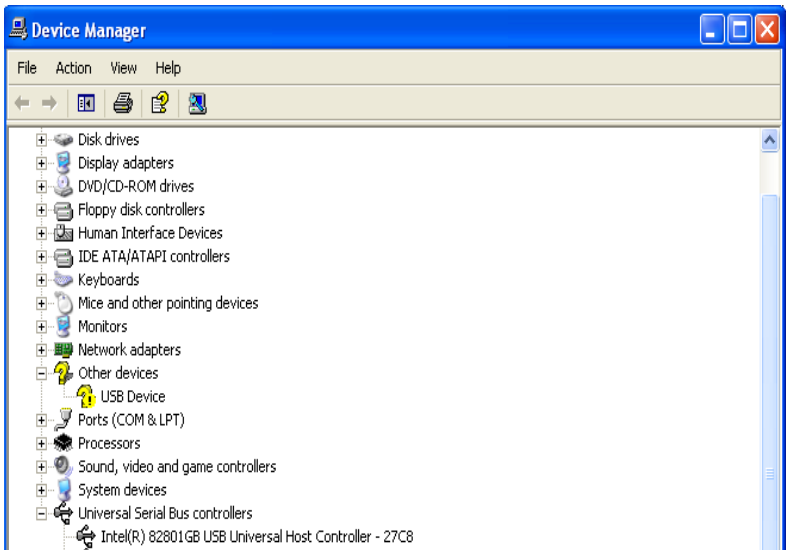
d) The Suniray USB firmware files need to be updated

Solution:

a) The Suniray USB is not recognized by the computer

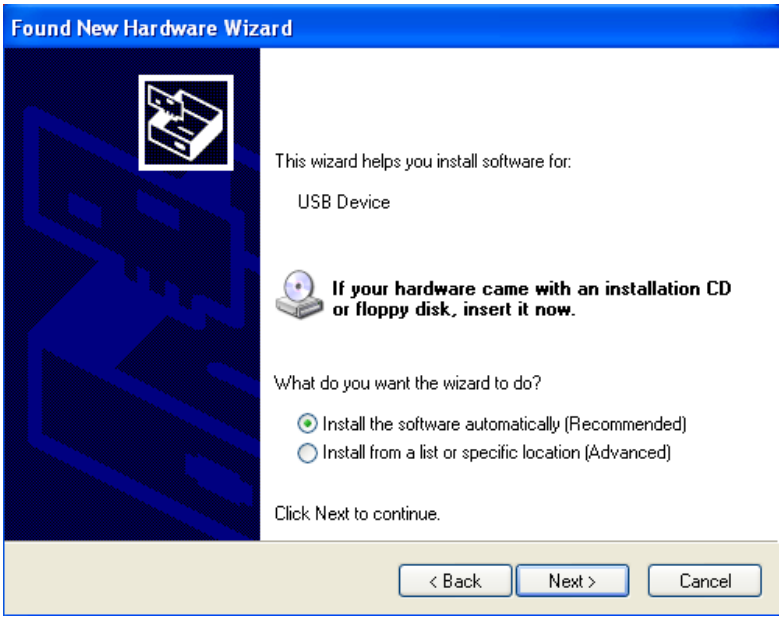
- Make sure the Suniray sensor is plugged in to the back USB port and the computer recognized the hardware.
- Check the Windows Device Manager to verify if the USB driver was installed successfully.

- If the Suniray USB driver was NOT properly installed, a device named **USB device** marked with a yellow exclamation mark will appear under **other devices.**



b) The Suniray USB driver is not installed

- Insert the ProfSuni disc in the CD-ROM drive. *//The driver is in D:\Drivers\SDR303*
- Double click on **USB Device** in **Other devices** then follow the 'Found New Hardware' wizard to install the driver.



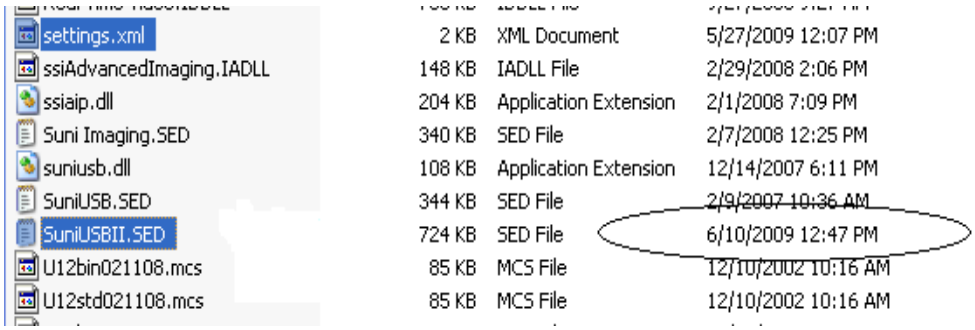
- Follow the prompts to finish the driver installation, when it's done successfully, Digital Radiography Device (SDR303) should be listed under Device Manager.

c) Suniray sensor is not properly plugged in

- Unplug the sensor and re-plug it back in, make sure the connector pushes all the way in.

d) Suniray USB firmware files not updated

- Right click on ProfSuni.exe icon on desktop, select Properties→Find Target and make sure the SuniUSBII.SED file is dated 6/10/09 or newer.



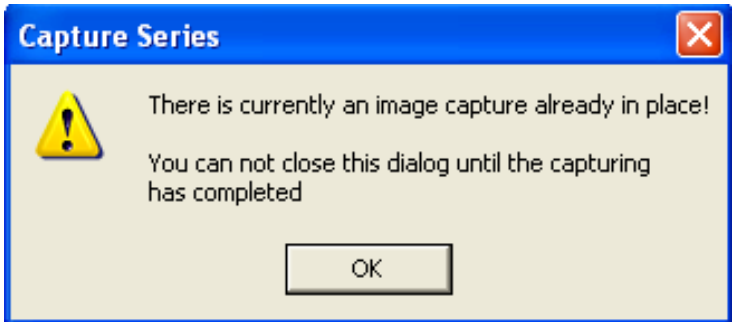
- Go to http://www.apteryxware.com/dental/downloads/xva3_5/suni.shtml for the latest SuniUSBII firmware upgrader.

Note: Suni hardware USB2000 and Suniray currently support 64-bit operating system; please refer to the readme.txt file in the TEC_Driver folder in our FTP site for proper installation instructions.

IV: Abort Sensor in Middle of Layout Series

Symptoms:

When trying to switch sensor or stop in the middle of layout capturing, the following message is displayed:



Cause:

User did not quit image captures properly or completed the previous captures before closing it.

Solution:

Finish the image capturing or stop layout series properly by clicking on the red **'X'** on the lower bottom left hand corner to abort capturing.

V: Sensor Self Triggering

Problem:

The sensor triggers by itself without any radiation induces.

This problem may occur due to the following:

a) Sensor enclosure splitting/opening

b) Sensor cable(internal) or connector damaged

c) Insufficient power from computer USB port

d) Noise Interference

Solution:

a) Sensor enclosure splitting/opening

- Inspect the enclosure of the sensor and make sure there's no splitting or cracks on the sensor.

b) Sensor cable(internal) or connector damaged

- Switch out the sensor. If the new sensor works, the problem most likely to be the first sensor; if the problem persisted, then it might not be the sensor.

c) Insufficient power from computer USB port

- Use the Ultra brand powered USB hub came with the sensor, connect the sensor to one of the ports and the cable from the port to the USB port.

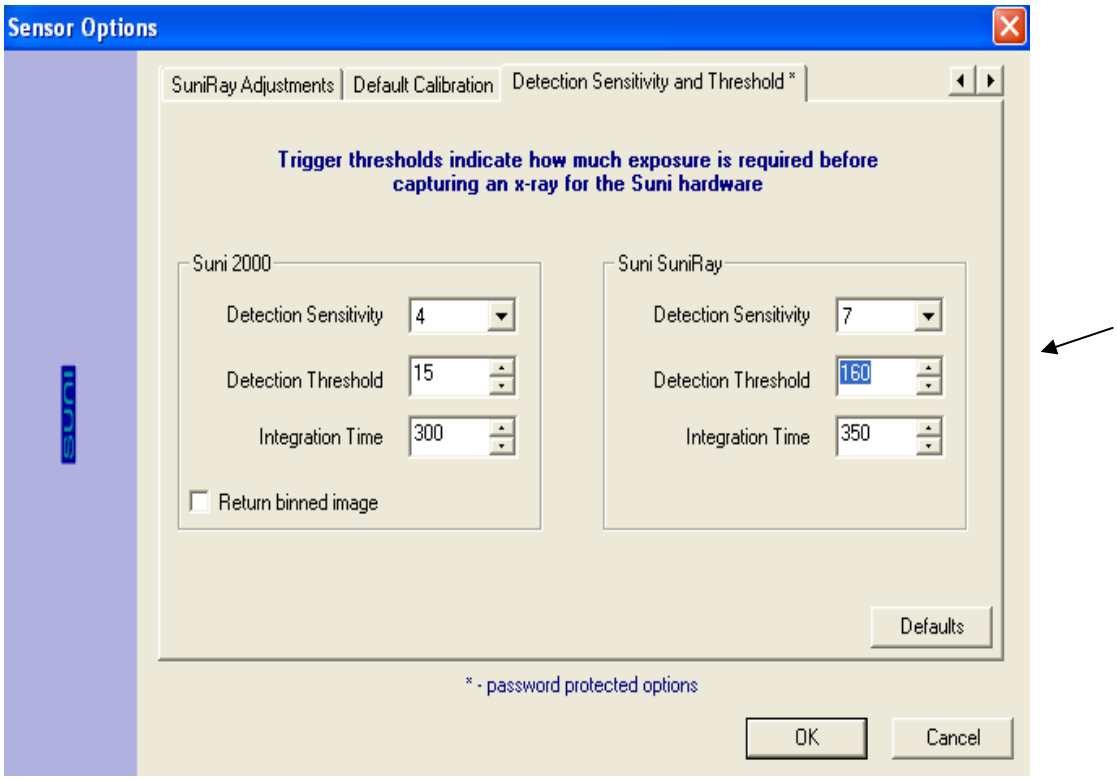
d) Noise Interference

- Go to **Tools→Options→SuniUSBII→Detection Sensitivity and Threshold**, lower the sensitivity value by 2 until no self-trigger is observed.

Or

e) Go to **Tools→Options→SuniUSBII→Detection Sensitivity and Threshold**, increase threshold value by 16 until no self-trigger is observed.

(Default is 160) *Password*: **dentalimage**



VI: Sensor Not Triggering

Problem:

When attempting to capture an image, screen stays at green 'Sensor Ready' mode even after the radiation induces.

This problem occurs in one of the followings:

a) Inconsistent or no radiation from the x-ray machine

b) Sensor not securely connected to the USB cable

c) Insufficient power from computer USB port

d) Low Sensor Detection Sensitivity

Solution:

a) Inconsistent or no radiation from the x-ray machine

- Increase the exposure settings or change to another x-ray machine to see if the problem persisted.

b) Sensor not securely connected to the USB cable

- Unplug the sensor and re-plug it back in, make sure the connector pushes all the way in.

c) Insufficient power from computer USB port

- Use the Ultra brand powered USB hub came with the sensor, connect the sensor to one of the ports and the cable from the port to the USB port.

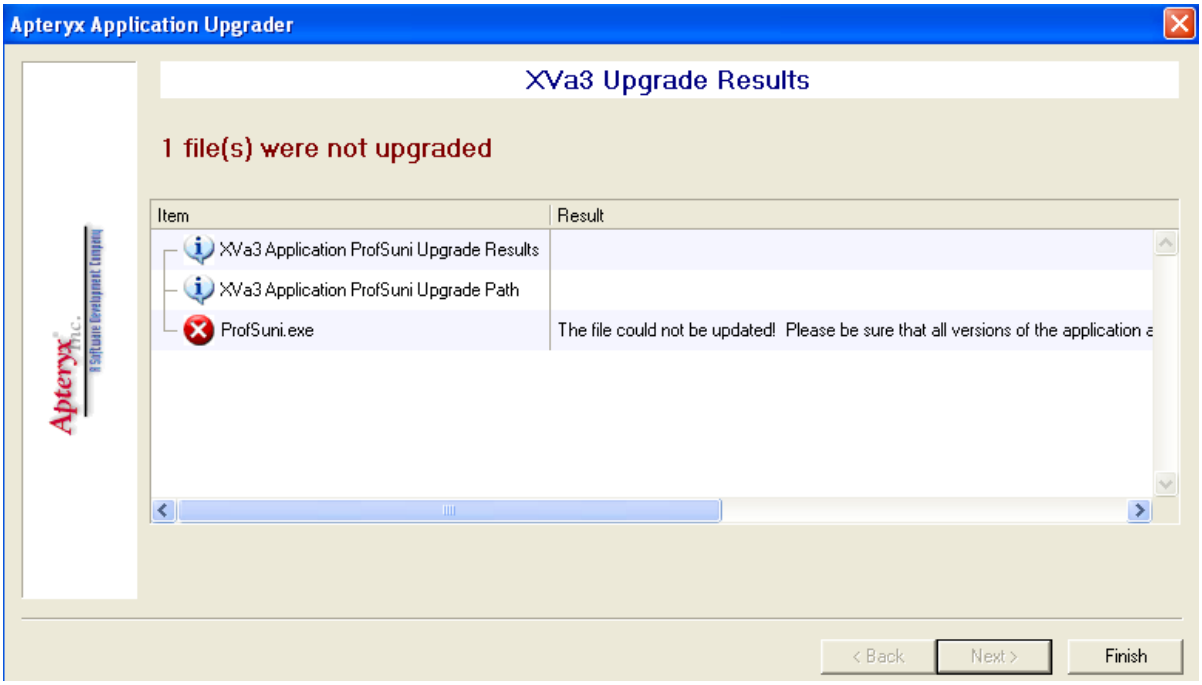
d) Low Sensor Detection Sensitivity

- Go to **Tools→Options→Sensor→SuniUSBII→Detection Sensitivity and Threshold,** increase Detection Sensitivity value by 2 until trigger is observed. (Default is 7) *password*: **dentalimage**

VII: ProfSuni Software Upgrade Error

Symptoms:

After downloaded the software upgrader and trying to run it, the following message is displayed:



Resolution:

Make sure ProfSuni program is closed in all computers (local and network) before running the software upgrader.

VIII: Out of PAC License Warning

Symptoms:

When starting ProfSuni, licensing warning information is displayed.

Cause:

The user has used/exceeded the number of licenses were purchased for the software.

Resolution:

To resolve licensing problem, the user must either purchase additional licenses or reallocate previously allocated license by selecting license from the **Licensed Computers** listing and then click on **Reallocate License** button.

IX: Image Quality – Grainy (or “noisy”)

Problem:

Image appears to be too light, grainy and lack of contrast.

Sample grainy image:

Cause:

Grainy (or “noisy”) image generally causes by under exposure.

Solution:

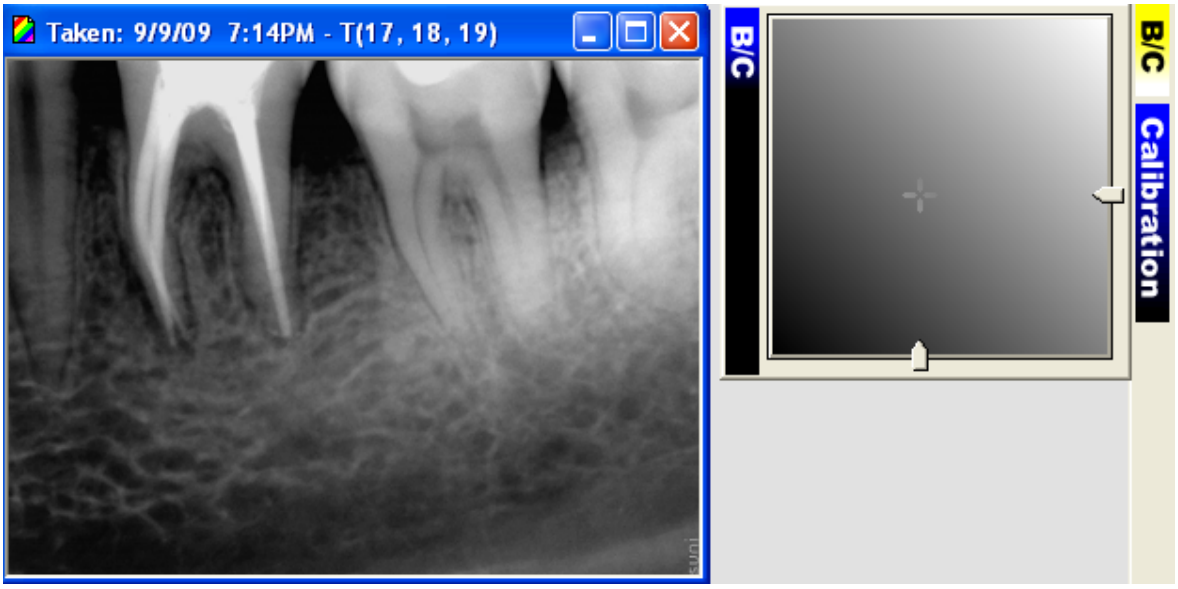
a) Increase the exposure setting from the X-ray unit, and/or decrease the distance between the unit and the sensor.

b) Use the image enhancement tools – **Brightness and Contrast**. In general, brightness/contrast enhancement changes the brightness and

the contrast of an image in order to try to improve the overall dynamic appearance of an image.

- **Real time B/C** – *This feature can be used to quickly modify the appearance of an image.*

  - Open an image, click on B/C on the sidebar to adjust the image by clicking and dragging in the main area of the control. To set the B/C back to normal, you can either double click or right click on the control.



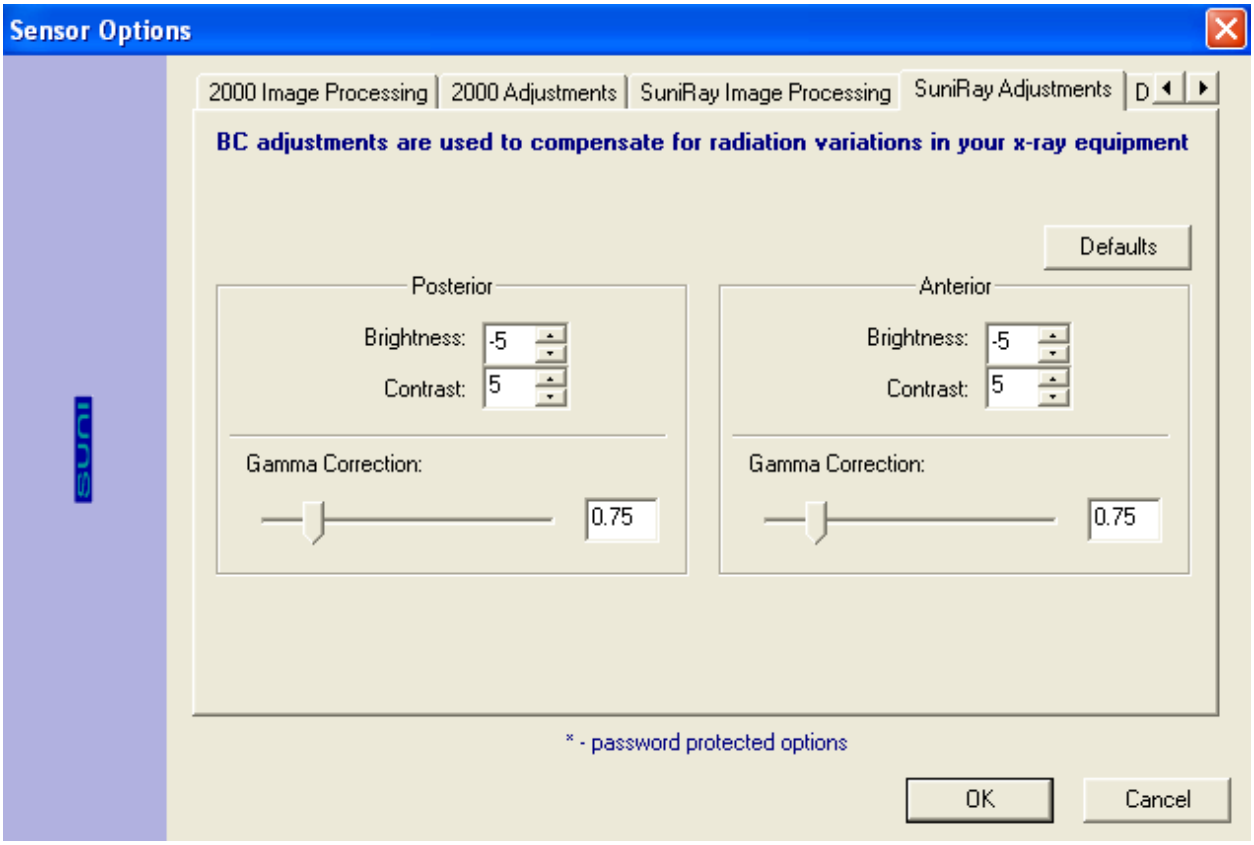
- **Automatic Brightness / Contrast** – *This feature automatically tries to determine the optimal brightness/contrast settings for the image.*

  - Go to **Enhancement→Brightness/Contrast→Auto Brightness/Contrast** to automatically adjust the brightness and contrast of the image. To set the brightness and contrast back to normal, click on '**Undo All**'.

- **Brightness / Contrast** – *This feature allows you to manually adjust the brightness and contrast of the image. After define the optimal B/C values, and then you can apply them to the pre-filters.*

  - Go to **Enhancement→Brightness/Contrast→Brightness and Contrast** and enter the optimal B/C values then click OK to save it.

Tips: Presetting Brightness to -5, Contrast to 5 and Gamma to 0.75 usually a good starting point, however, you can increase/decrease the value based on the result of the image.


Sensor Options
2000 Image Processing
2000 Adjustments
SuniRay Image Processing
SuniRay Adjustments
D
BC adjustments are used to compensate for radiation variations in your x-ray equipment
Defaults
Posterior
Brightness:
-5
Contrast:
5
Gamma Correction:
0.75
Anterior
Brightness:
-5
Contrast:
5
Gamma Correction:
0.75
* - password protected options
OK
Cancel

X: Image Quality – Dark (or "burned-out")

Problem:

Image appears to be too dark, or teeth appear to be jagged.

Sample burned-out image:

Cause:

Dark (or "burned-out) image generally causes by over exposure.

Solution:

Try turning the radiation down a notch. Most sensors operate best at a time of between 0.06 seconds (about 4 pulses) to 0.10 seconds (6 pulses). Usually, a good starting point is at 70kVp, 7mA and 0.06 seconds (about 4 pulses), and then go up or down one notch at a time from there.

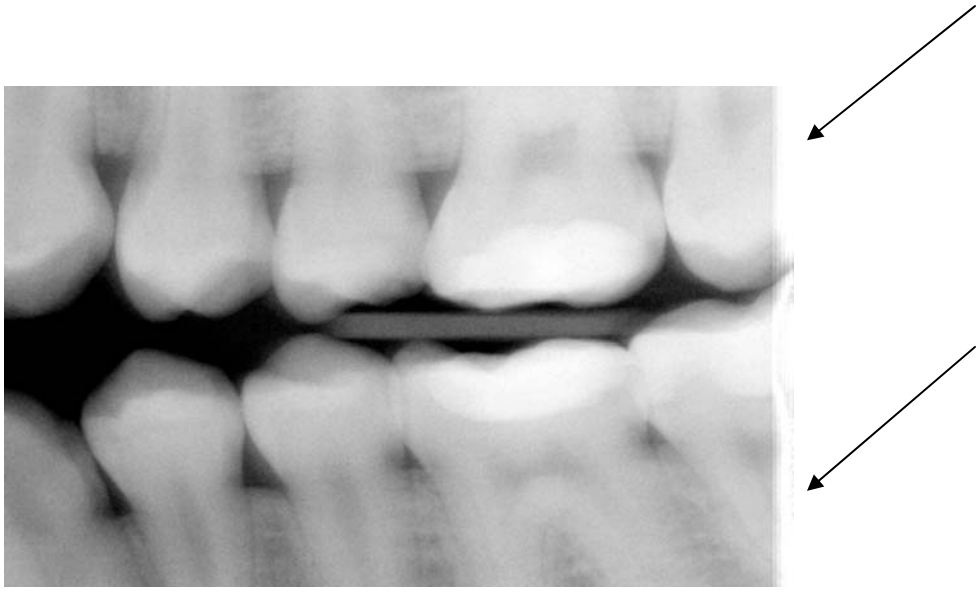
Note: It's generally a good idea, though, to get in a habit of having the X-ray unit in the same position of all your X-ray images, this will ensure consistency.

XI: Image Quality – Stripes on the Edge

Problem:

Stripes appear on the edge of the image, or “stair-stepping”.

Sample “stair-stepping” image:



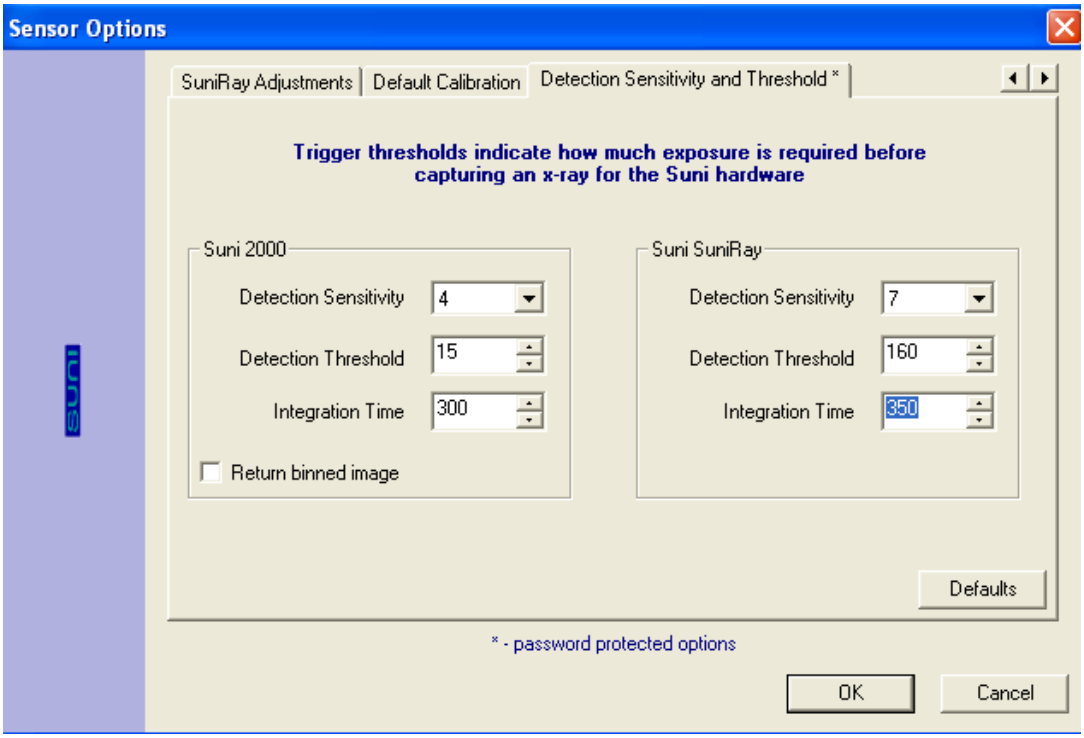
Cause:

Longer warm up pulses from certain AC-head machine.

Solution:

Go to **Tools→Options→Sensor→SuniUSBII→Detection and Sensitivity** and then increase the integration time by a step of 50ms until no stripes is observed.


Sensor Options
SuniRay Adjustments
Default Calibration
Detection Sensitivity and Threshold *
Allow auto-orientation
Password Required
A password is required in order to access the advanced options.
Password
OK
Cancel
* - password protected options
OK
Cancel

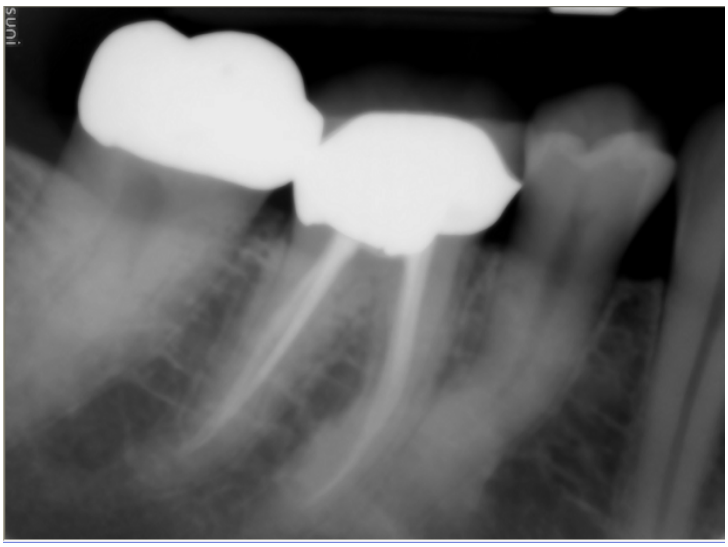

Sensor Options
SuniRay Adjustments
Default Calibration
Detection Sensitivity and Threshold *
Trigger thresholds indicate how much exposure is required before capturing an x-ray for the Suni hardware
Suni 2000
Detection Sensitivity
4
Detection Threshold
15
Integration Time
300
Return binned image
Suni SuniRay
Detection Sensitivity
7
Detection Threshold
160
Integration Time
350
Defaults
* - password protected options
OK
Cancel

XII: Image Quality – Blurry (or "fuzzy")

Problem:

Image appears to be blurry, or fuzzy.

Sample "blurry" image:



Cause:

a) Longer warm up pulses from certain AC-head machine.

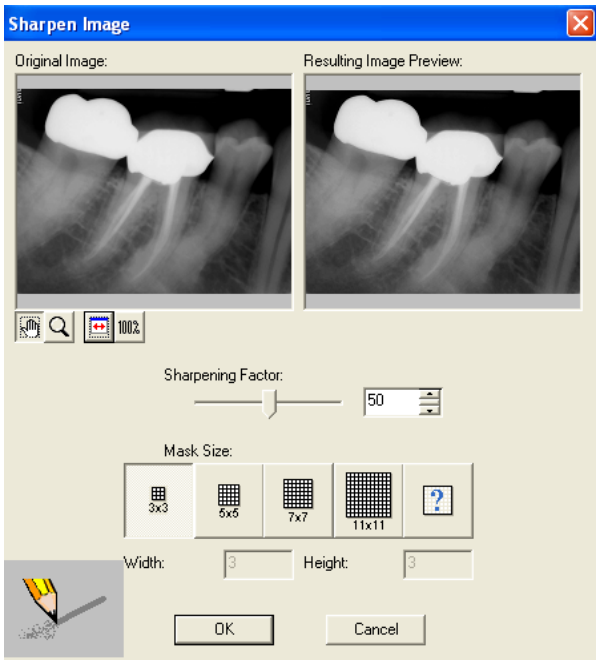
b) Movement from the x-ray head or the image taking technique.

Solution:

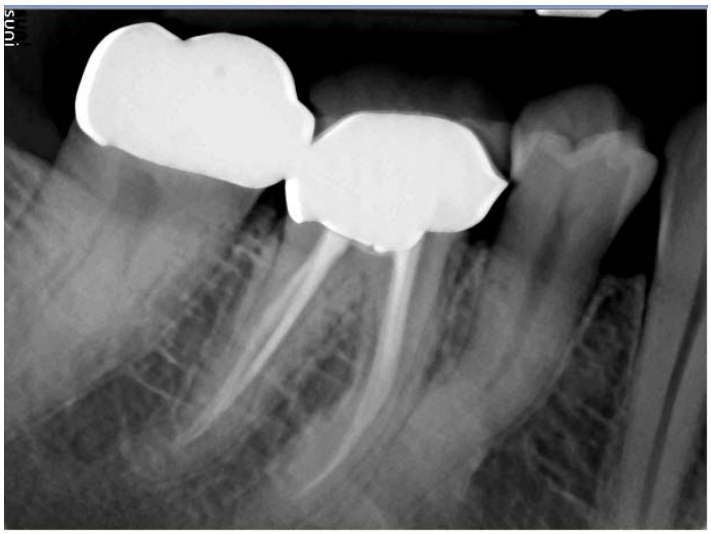
a) Use the same method on page 20 to increase the integration time

b) Make sure no movement from the x-ray source

Tips: Another way to enhance the blurry image is to use the '**Sharpen'** enhancement tool in the application. In Enhancements, go to **Enhancement→Sharpen**, then adjust the Sharpening Factor and select the Mask Size to get the optimal result.



The following image as a result of Sharpening Factor set at 20, custom Mask Size of the Width at 41and Height at 3.



XIII: XVA Crash in Middle of a Layout Series

Problem:

Prof. Suni application crashes in the middle of a layout series.

This problem occurs due to one of the following:

a) User does not quit or complete active image captures before terminating application.

b) User capturing image from a layout that previously did not closed.

c) Computer enters suspend mode.

d) Bad USB connection to the computer.

e) Older version of software or USB firmware used.

Solution:

a) Make sure no capturing in progress before terminating application.

b) Close the previous progression before capturing under a new one.

c) Disable the suspend mode of the computer - Control Panel→Power Options

d) Go to Device Manager and see if the USB driver still recognized. If not, replace the USB cable and/or replace the sensor to see if the problem persisted.

e) Call Suni technical support at 1-800-GET-SUNI to get help with the appropriate software upgrade.