Image Acquisition

CDR DICOM 5 is designed to optimize and enhance the quality of images taken with Schick Elite and Schick 33 Sensors.

Schick 33 Sensors are capable of acquiring images in either high resolution mode, which is unique to Schick 33 Sensors, or standard mode. By default, high-resolution acquisition is automatically selected. In addition, dynamic image sharpening and task-based user profiles, also unique to Schick 33 Sensors, are available and are described in this document.

For Schick Elite Sensors, other options apply: Edge High, Edge Low, Smooth, and Edge Pro. These options, like the ones for High Resolution, are controlled in the Image tab of X-ray Settings. On new installations, Image Enhancement is enabled by default with the Edge Pro option selected.

Please note that the image enhancements for the Schick Elite product — Edge High, Edge Low, Smooth, and Edge Pro — have no effect on images acquired with Schick 33 Sensors and their effects are effectively ignored.The same is true of Schick 33 enhancements and images acquired with Schick Elite Sensors.
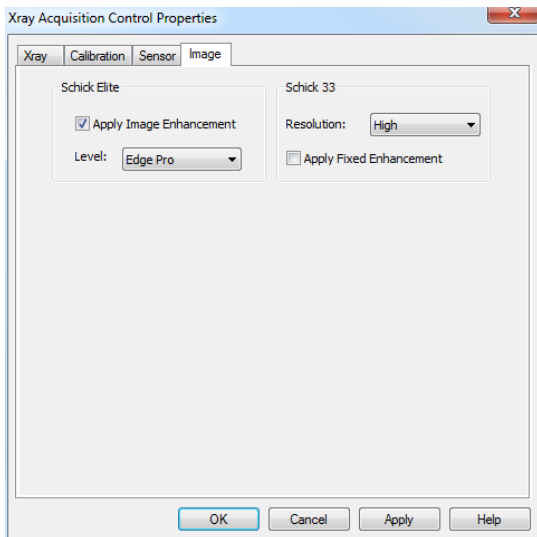
Image Enhancement Options

Sharpen

Sharpen is an enhancement feature developed specifically for Schick 33 images. Sharpen optimizes Schick 33 images for detail and contrast and is applied automatically to every image taken with Schick 33 Sensors.

Sharpen can be adjusted dynamically, using either a slider or a cursor. To access the Sharpen cursor right-click on a current image in the Zoom window and select "Sharpen" from the context menu.

Moving the slider towards the "more" end of the scale (more Sharpen) increases image contrast. Adjusting the slider towards the "less" end of the scale (less Sharpen) provides a smoother image. The mid-point between the two ends of the slider is where contrast and smoothness are equally balanced.

A percentage on the slider serves as an easy way to mark the specific Sharpen settings that are most useful to you.

less   Sharpen: 50%   more
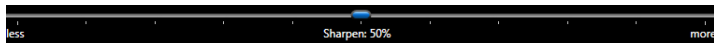
Sharpen Slider

Sharpen (continued)

User profiles can save Sharpen settings for commonly-performed clinical tasks such as Endodontic, Periodontic, General Dentistry, Restorative, and Hygiene. For example, once you have saved a Sharpen level for a clinical task, the slider will move automatically to that position, applying your preferred level of sharpness when you select that task.

The Sharpen slider can be positioned at the Top or Bottom areas outside the image, or as an Overlay on the image.

Sharpen Slider Positioned Below Image

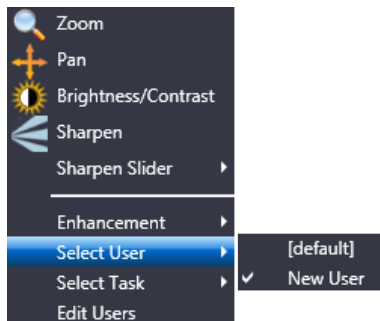# User Profiles and Diagnostic Tasks

Customers with Schick 33 Sensors can customize Sharpen slider settings and pre-select the appropriate amount of image sharpening for commonly-performed clinical tasks such as Endodontic, Periodontic, General Dentistry, Restorative, and Hygiene.

As you work with the dynamic Sharpening, you may find that some Sharpen settings provide you with optimal viewing results. User Profiles enable you to associate a Sharpen value with any of the task categories mentioned above and save that information with your profile. This Sharpen value is applied automatically for that task so you can focus on image details and results.
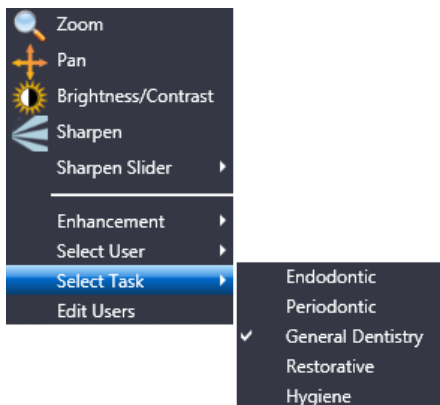
In offices with multiple practitioners, each doctor or hygienist can select his or her own profile and change the Sharpen values without affecting the preferences of other users.

Additional details regarding diagnostic tasks may be found in the User Guide for your Schick Sensor.

Select User Profile

Select Diagnostic Task

Enhancement Modes

One of the principal advantages of dynamic image enhancement is the ability to adjust the amount of sharpness in an image after it is acquired. This feature, which is always available to Schick 33 customers with CDR DICOM and Sidexis imaging software, has been updated to offer an additional selection.
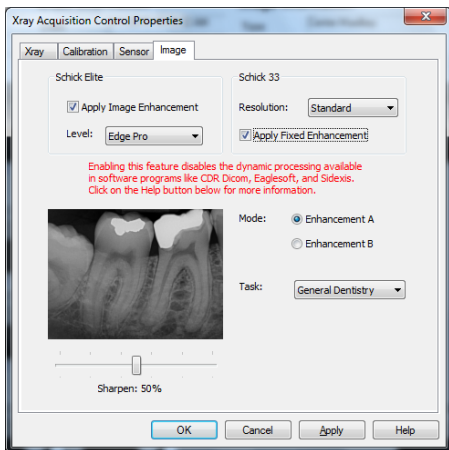
Two modes are available as described below.

| A | Provides the original image enhancement processing for Schick 33 sensors. It displays image features in vivid detail and supports a wide sharpening range |
| B | Provides a softer enhancement, especially around object edges, and supports a tighter sharpening range. |
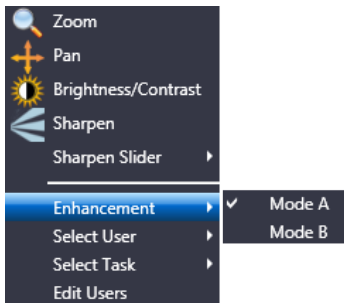
Selecting Enhancement Modes

Image Enhancement Choices

An alternate option in the way Schick 33 images are presented for display is available. This alternative, known as fixed enhancement, is intended primarily for third-party imaging customers that do not have access to the dynamic processing in CDR Dicom and Sidexis and would not otherwise benefit from the enhancements available for Schick 33 high-resolution images.

Selecting Fixed Enhancement

Selecting Fixed or Dynamic Enhancement

Apply Fixed Enhancement	Results
☐ Not selected	Applies dynamic processing in CDR Dicom and Sidexis software. Enables users to adjust the sharpness slider, to choose any diagnostic task, and to select a different enhancement mode AFTER the image is displayed. This box is unchecked by default.
☑ Selected*	Applies fixed processing in any imaging software compatible with Schick 33 sensors. Enables users to select a specific degree of sharpness, a particular diagnostic task, and either enhancement mode BEFORE the image is acquired. The effects of fixed processing cannot be changed after image display.

* Selecting this option by CDR DICOM and Sidexis customers will disable dynamic processing and the availability of the Sharpen slider, Diagnostic tasks, and Enhancement Modes after the image is presented for display.

Fixed Enhancement

Sharpen Slider	Enables users to select a specific degree of sharpness, along a scale from 0 to 100%, BEFORE the image is acquired. The selected sharpness is applied in addition to the other choices made for fixed enhancement, such as Mode and Task.
Sample Image Preview	Provides a preview of how an image might be affected by user-selected fixed enhancement choices (Mode, Task, and Sharpen).
Mode A	Provides the original image enhancement processing for Schick 33 sensors. It displays image features in vivid detail and supports a wide sharpening range.
Mode B	Provides a softer enhancement, especially around object edges, and supports a tighter sharpening range.
Task	Provides the same diagnostic tasks optimized for brightness and contrast described previously in this document.

NOTE: The subtle difference between Mode A and B may be difficult to see in the sample image preview. It may be helpful to move the slider to 100% to note the differences more easily.
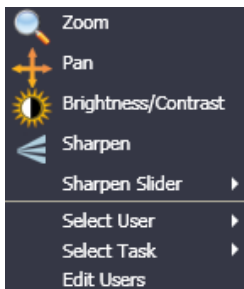
Enhanced Zoom Window

Although Sharpen is unique to images taken with Schick 33 Sensors, other features have been enhanced in CDR DICOM 5 software and these are available for high-resolution and normal- resolution images.

The following image tools have been enhanced in CDR DICOM 5:

- » Zoom
- » Pan
- » Brightness / Contrast.

These items are available from a short menu, which makes accessing them, or switching between them, simpler and faster. Right-click on an image in the Zoom window to display the menu shown below.

Refer to the table on the next page for more information about using these updated features.

Feature	Double-Click the Left Mouse Button to:	Press and Hold Down the Left Mouse Button to:
Zoom	Magnify the image 500%. Double-click again to return the image magnification to 100%.	Move the cursor up to increase magnification. Move the cursor down to decrease magnification.
Pan	Magnify the image 500%. Double-click again to return the image magnification to 100%.	Move the cursor either up / down or left / right to pan around the image at the same magnification.
Brightness / Contrast	Remove any brightness and contrast adjustments.	Move the cursor up to increase brightness. Move the cursor down to decrease brightness. Move the cursor to the right to increase contrast. Move the cursor to the left to decrease contrast.

Image Sharing

Sending images by e-mail has been supported in CDR DICOM software for many years, but in CDR DICOM 5 new options for image sharing are available, which include:

> » E-mailing images individually or by series in the popular JPEG format
> » Saving a CDRZIP file to a location that you specify so it can be attached and sent by e-mail
> » Saving JPEG images to another location
> » Creating a "postcard" including selected images or the entire exam for patients or other professionals.

The illustration on the next page describes the several options. Step-by-step instructions can be found in the CDR DICOM User Guide.

In the current software, it is also possible to change the background color of the postcard. To change the background, perform the following steps:

> » Go to the System menu in CDR DICOM.
> » Select CDR Options.
> » Select the Windows tab.
> » Choose a color from the Postcard Background drop-down list.
> » Click OK.

Send Mail

Patient Information:

Last Name: CHECKUP
First Name: SERIES
ID Number: 123-45-6789
Examination Date: 1/9/2012

Dentist Information:

○ CDRZIP
○ JPEG
○ Postcard

● Selected Images   7
○ Entire Examination

○ Email
● File

[Generate attachment]   [Cancel]

Choose the format the current exam is to be sent in or saved as.

If you have selected the images in the exam manually, that number will appear here; otherwise, the entire examination can be selected.

Choose "E-mail" to have the selected images or the entire exam attached to an e-mail message. Choose "File" to save the selected images or entire exam to your workstation.
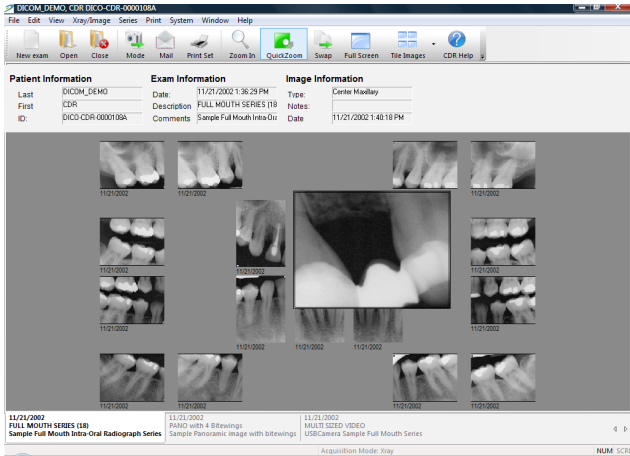
QuickZoom

The QuickZoom option can be used to view all the images in the current exam at one of several magnifications. If you are familiar with this feature, you know that its principal advantage is the opportunity to pan easily from image-to-image in the exam viewset, choosing different magnifications, viewing sizes, and shapes.

Although this option, like the e-mail option mentioned earlier, has been available in CDR DICOM for many years, it has been updated by the latest software as follows:

> » Clicking on the QuickZoom button prepares the viewing window, switches CDR DICOM to QuickZoom mode, and opens the QuickZoom window. *Once opened, you no longer need to press and hold the mouse button to keep the QuickZoom window active.*
>
> » To change a QuickZoom setting, left click again to close the QuickZoom window, then right click for options (Size, Zoom, Shape).
>
> » To exit QuickZoom mode, right click and select "Off" from the menu.

A screen shot of QuickZoom is provided on the next page.

QuickZoom Window

Exam Comments

Exam comments provide an opportunity to add a general notation to an exam *(also called a study in DICOM terminology)*. Unlike custom notes, which are specific to a single image and are entered separately for each image, exam comments are entered once, but are applied automatically to every image in the exam.

Practitioners who use exam comments tend to add or edit them at the conclusion of an exam as an easy way to record a general observation. Because an exam comment is displayed in the "Exam Information" area above the viewset, it serves as a convenient reminder.

In previous versions of CDR DICOM, exam comments could be added when starting a new exam, but they could only be edited in the CDR Data Administration Utility. In the current software, exam comments can be added and edited in either location.

Click Edit Exam Comments under the Edit menu to do this in CDR DICOM. With the exam *(study)* list open, click Study Information under the Edit menu to do this in the CDR Data Administration Utility.
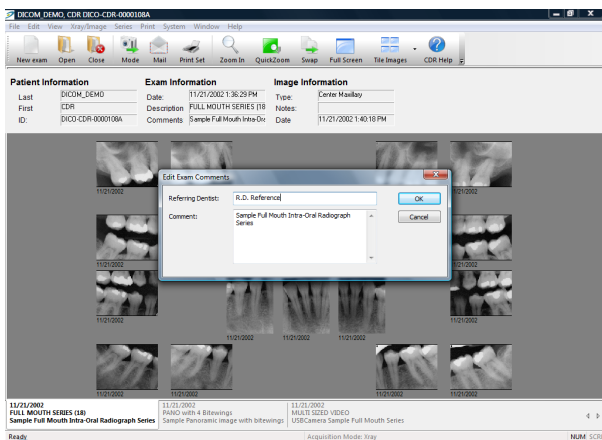
Exam Comments in CDR DICOM
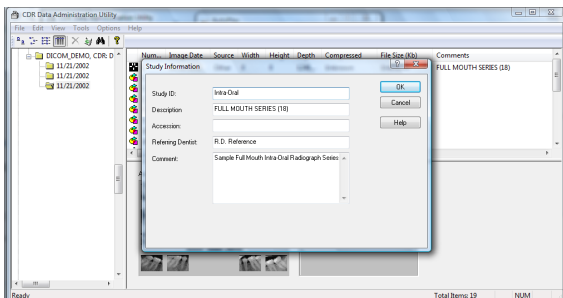
Exam Comments in CDR Data Administration Utility

Exposure Quality

Exposure Quality is designed to convey, in a visual way, an assessment of images by highlighting a range where image exposure is considered optimal *(may be unavailable for most non-Schick 33 images)*.

At the top of the meter, the range shown in green means that the image has been exposed optimally for the technique factors that were used.

The range in blue suggests that the image was underexposed and adjusting technique factors would improve image quality.

The range in orange suggests just the opposite: that the image was overexposed and adjusting technique factors would reduce patient dose without reducing image quality.

If you prefer to keep the Exposure meter from being displayed, it can be hidden automatically by turning this option off in CDR Settings > Windows, or it can be closed manually, during each session, by unchecking Display Exposure Meter in the Windows menu.

The Exposure Quality meter may be unavailable for most images acquired with non-Schick 33 Sensors. When these images are displayed, the meter will appear dimmed with the wording, "Not Available for this Image," appearing above it.

For additional details on the Exposure Quality meter, including steps on making it available for new images, please refer to the user guide on the CDR DICOM software disk or on our website.

Image Tiling

Tiling is a feature that displays selected images in a non-overlapping arrangement. In previous versions of CDR DICOM, the software arranged the images automatically, arriving at a layout that made the best use of the display area.

In CDR DICOM 5 you have more control over the tiling arrangement. There are three tiling options:

» Tile Vertical
» Tile Horizontal
» Tile Multiple.

To use Tiling, select two or more images from the current exam and select a tiling option from the Windows menu or from the Tile icon on the toolbar.

If you choose Tile Vertical, the images will appear one below another. In Tile Horizontal, the images are displayed side-by-side. The Tile Multiple option orders the images automatically to optimize their viewing.

On the next page you can see an example of the Tile Multiple option, showing images in both vertical and horizontal tiling arrangements.

Tiling doesn't change the orientation of the images themselves or the view boxes, only their layout on the screen when you open and view several images at once.
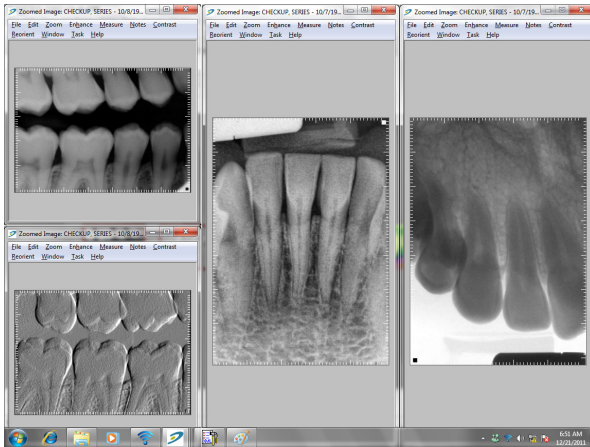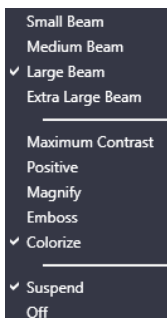
Flashlight

In CDR DICOM 5, additional enhancements are available in Flashlight besides Maximize Contrast *(which was available previously)*, and these are applied just inside the beam area.

The following enhancements are available with Flashlight:

> » Maximize Contrast
> » Positive
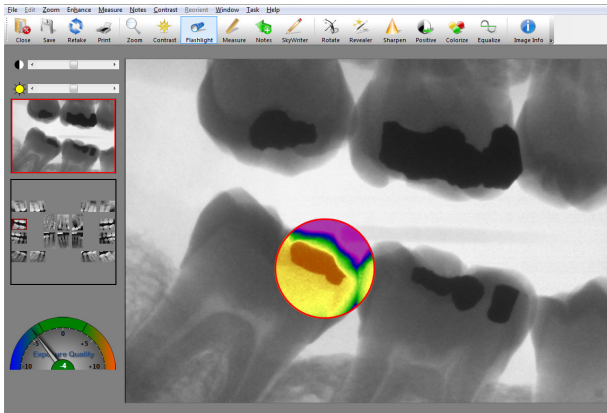> » Magnify
> » Emboss
> » Colorize.

To apply them, click on the Flashlight icon in the Zoom window and right-click on the image to display a short menu of options, as shown below.

Flashlight (continued)

Some enhancements in the Zoom window can be applied to the entire image without affecting the area inside the Flashlight beam. Colorize and Positive, for example, work this way and are applied by clicking on the appropriate Zoom window toolbar icon or menu.

As an example, the image below shows Flashlight with Colorize inside the beam area while Positive has been applied to the image as a whole.

Wait for Appropriate Prompts before Operating X-ray Source

To avoid exposing the patient to unnecessary X-rays, ensure that the CDR exam window viewbox is flashing green (default color) in AutoTake mode, or that the message, "Waiting to take X-ray," is displayed before triggering the X-ray source.

Always Use Sheaths with Sensors

Use protective sheaths every time a Sensor is used. Never use a damaged sheath. Always dispose of the sheath after every patient. Protective sheaths are single-use devices and must not be reused under any circumstance. Reuse of single-use devices/instruments may cause them to become contaminated, compromise their intended function, and result in patient and user infection, injury and/or illness.

Apply Recommended Procedures for Cleaning

To help ensure proper hygiene and to protect against infectious disease, refer to the User Guide for your Sensor(s) and observe all device cleaning and patient protection recommendations specified there.

Although water-resistant, the Sensor should never be soaked or submerged in disinfecting solution during any cleaning procedure. Failure to comply with this precaution may cause liquid to enter the Sensor and can prevent it from operating properly.

Product Manuals from Sirona Dental

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