



CARESTREAM Vita/Vita LE/Vita XE

CR System Software / V3.2

User Guide

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Use of the Guide

CARESTREAM CR Systems are designed to meet international safety and performance standards. Personnel operating the unit must have a thorough understanding of the proper operation of the system. This guide has been prepared to aid medical and technical personnel to understand and operate the system. Do not operate the system before reading this manual and gaining a clear understanding of the operation of the system. If any part of this manual is not clear, please contact your Carestream Health representative for clarification.



Authorized European Representative
Carestream Health France
1, rue Galilee
93192 NOISY-LE-GRAND CEDEX
France
CARESTREAM



Carestream Health, Inc.
Rochester, N.Y., 14608
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1 Introduction

The information contained herein is based on the experience and knowledge relating to the subject matter gained by Carestream Health, Inc. prior to publication.

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Document Conventions

NOTE: From this point on, CARESTREAM Vita CR SYSTEM SOFTWARE will referred to as “CR Systems Software.”

NOTE: From this point on, CARESTREAM DIRECTVIEW Vita/Vita LE/Vita SE/Vita XE CR SYSTEM will referred to as CR System or System.

NOTE: Notes provide additional information, such as expanded explanations, hints, or reminders.

IMPORTANT: *Important highlights critical policy information that affects how you use this manual and this product*



CAUTION:

Caution points out procedures that you must follow precisely to avoid damage to the system or any of its components, yourself or others, loss of data, or corruption of files in software applications.

2 Working With Study Data (purchasable option)

Managing Study Information–MWL

The Modality Work List (MWL) enables the receipt of studies from the local Hospital Information System/Radiology Information System (HIS/RIS) according to criteria defined in the DICOM settings. The MWL screen in CR System Software provides the following functions:

- Retrieving study data from the RIS/HIS.
- Managing the accepted study data.
- Selecting a study from the MWL.

Retrieving Study Data from the HIS/RIS

Click **MWL**; a studies list is transferred to the *CR Systems Software* screen. This list is refreshed when the **Query Ris** button is pressed. If you click the **Query Ris** button, but the list doesn't refresh, the Information System is not available.

Managing the Accepted Study Data

The study data appears as a list, giving Last Name, First Name, Study ID, Accession Number, and Study Description. You can sort the order of the list by clicking on the heading; the arrow direction indicates the sorting order.

When the RIS sends a new study, the new study data will automatically appear at the top of the study list so the operator is aware of its arrival.

Searching for a Study in MWL You can search the locally retrieved list for a study using the criteria in the Search criteria field, and click the **Search** button.

Reviewing Study Details You can review study details before scanning the images by selecting a study, and then clicking on **Review** button.

Showing the Full Study List

1. Click **Clear** to clear the search criteria fields.
2. Click **Query RIS** to update the scheduled study list.

Adding a Study to the Exam Screen After scanning a study, the study row is highlighted in green to alert the User that the study has been scanned.



Patient ID	Patient Name	Birth Date	Gender	Accession Number	Study Date
89882777	Yossi Yossi			98998888	
8716176	2 Test Squares	7/1/02/2000		51631354	
55556666	Fon Tole			77775666	
495174171234567890101	last1test1test2test3test456789 f			27333552	
11112222	ETAN OERDA			33334444	

Study after being marked in MWL

Selecting a Study from the MWL



Modality Work List Screen

#	Component	Description
1	Acquire Study	Select a study and then click the Acquire button to go to the Scan screen.
2	Query Ris	Click to update the MWL data immediately.
3	Review	Click to review study details before performing the scan process.
4	Schedule	Click to copy the study from the MWL screen to the Exam screen.
5	VKBD	Click to enable and disable the virtual keyboard on the workstation touchscreen. When disabled, information entry is accomplished with a normal hardware keyboard.
6	Search (and Criteria Fields)	Search the studies list using the criteria entered in the Search Criteria fields (outlined in white in the preceding graphic).

#	Component	Description
7	Scroll Bar	Enables scrolling through the study list. Horizontal scrolling is shown here. Vertical scroll bar appears when there are several study records to choose from.
8	Study List	The Scheduled Study list shows the results of a query to RIS, according to the defined DICOM settings.
9	Settings button	The Settings are enabled according to user level definitions (see “Admin Tab” on page 6-13). The Settings button opens a menu that includes Settings, DICOM Settings, Procedure Mapping, and Annotation Tool.

Managing Study Information–Manual Study Entry

Click the **Exam** button to access the Manual Study Entry dialog. This screen allows you to add, delete, and edit study information.

This screen enables study information management when MWL is not available.

Overview: Creating a New Study

The screenshot shows the 'Manual Study Entry' dialog box. It is divided into three main sections: Patient, Birth Date, and Study. The Patient section includes fields for *ID (1234567), *Last Name (Joe), *First Name (Smith), and Gender (Other). The Birth Date section has dropdowns for Month (2), Day (6), and Year (1956). The Study section includes fields for Accession no. (1), Operator (12345), Physician, Referring Physician, and Study Description. On the right side, there are four buttons: OK (1), Cancel (2), Acquire Study (3), and Clear (4). Below the dialog box is a virtual keyboard with a numeric keypad, QWERTY keys, and function keys like Tab, Shift, Caps Lock, Space, and Enter.

Study entry screen

#	Component	Description
1	OK	Click to accept/enter all of the information typed into the fields.
2	Cancel	Click to return to the Exam screen.
3	Acquire Study	Click to scan the cassette.
4	Clear	Click to clear all information currently entered for the current Study.

#	Component	Description
5	Study Details Fields	Enter Study information. Areas highlighted in red are required. Required areas can be configured. See “User Preferences 1 Tab” on page 6-2 and “User Preferences 2 Tab” on page 6-4 .
6	Patient Birth Date Fields	Enter Patient birth date values. Patient birth date order can be configured. See “User Preferences 1 Tab” on page 6-2 and “User Preferences 2 Tab” on page 6-4 .
7	Study Details Fields	Enter details for the Study. Physician and Referring Physician data can be configured. See “Admin Tab” on page 6-13 .

General Workflow

1. Insert study details and add them to the list.
2. Select a study from the list and click the Acquire button; the Scan screen will open (see [“Acquiring New Images” on page 3-1](#)).

NOTE: Clicking **Acquire** will automatically add the study to the study list, and the scan screen will open.

The available fields can be customized to suit the site’s imaging workflows. See [“Configuring the Study Screens” on page 6-5](#).

Adding a New Study

See [“Overview: Creating a New Study” on page 2-5](#) for more information.

1. Click **New**. The Add Study screen appears:
2. Enter study information.

NOTE: During the Study data entry process, if the Study has previously been entered into the system, the application will recognize this and automatically complete the other fields with the previously-entered data.

3. Click **OK** to add the study to the list or **Cancel** to cancel the entry.

NOTE: Fields marked in red and with a red asterisk next to the field name are mandatory. Mandated fields and all other tabular information in the software can be custom configured. See [“Configuring the Study Screens” on page 6-5](#)).

Searching for a Study

For details on the Study Search controls, see [“Selecting a Study from the MWL” on page 2-3](#).

1. Enter any combination of Study name (last or first), or a Study ID number in the Study Search fields.

2. Touch **Enter** on the virtual, or select the **Enter** key on a configured hardware keyboard.

Entering partial information also allows a quick search. For example, searching for “John” will locate and display information for “Johnson”.

Deleting a Study

1. Select a study from the Study List.
2. Click **Delete**.

A confirmation dialog box appears.

3. Confirm deleting the study.

3 Acquiring New Images

This chapter describes the steps required for acquiring new images or studies for new or existing studies and performing scans.

Logging In

1. Turn on the PC. The application opens automatically. A splash screen shows until the **CR Systems Software** login screen appears.
2. Fill in the user name and password, and then click **Login**. The default Exam screen appears.

NOTE: The User Name is case sensitive.

NOTE: The default depends on the parameter that was set in the User settings.

To navigate between the Exam screen and the MWL, click the relevant button in the lower left side of the screen.



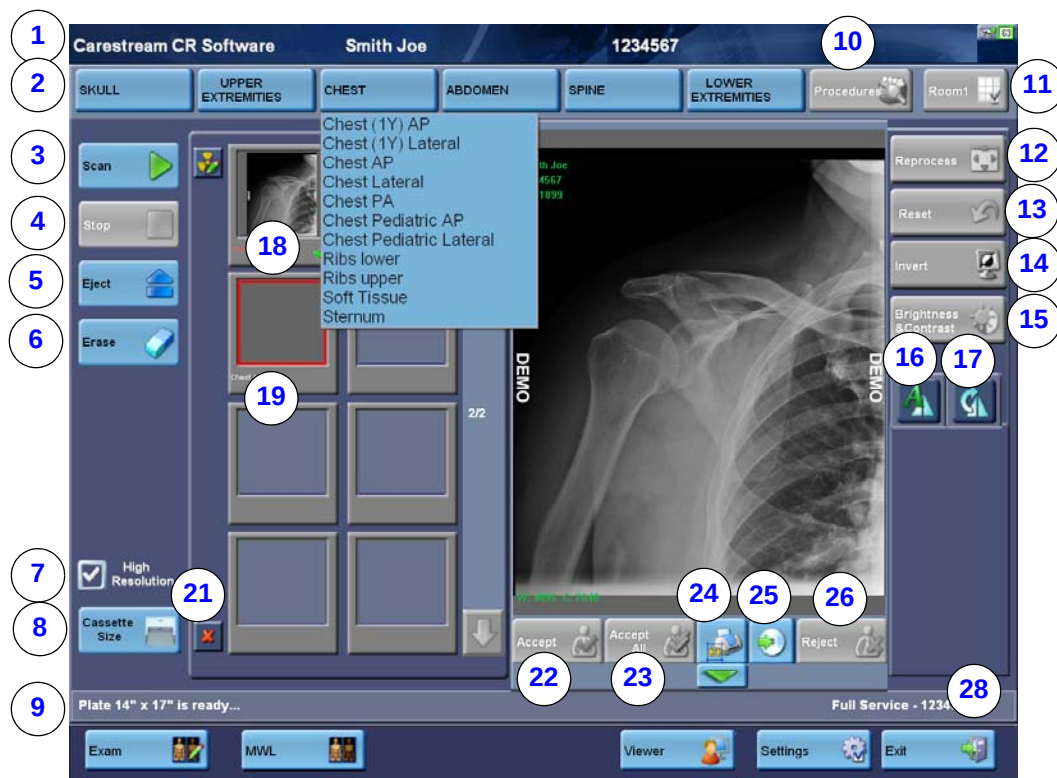
Exam and MWL

Scanning Images

Opening the Acquire Screen

1. For a new study, click **Add**. For an existing study select a study from the list.
2. Click **Acquire Study**.
3. After a study has been selected, the Scan screen allows you to scan, add annotations, reprocess review, send to DICOM destinations, or print images.
4. Check the study details in the Title Bar to confirm that you have selected the correct study.

Scan Screen Overview



Scan Screen

	Component	Description
1	Title Bar	Includes Study name, and ID number.
2	Body Part Selection	Opens body part and projection sub-menu(s).
2a	Body Part Sub-Menu	Displays a list of the projection images that are included in the selected body part list.
3	Scan	Begins scan.
4	Stop	Stops the scanning process and ejects the screen.
5	Eject	Ejects the screen without erasing the image.
6	Erase	Erases the image and ejects the screen. If the scan process, or erasing process was interrupted because of an error or operator mistake, it is important to re-insert the cassette and perform an Erase process manually to prevent double exposure.

	Component	Description
7	High Resolution	Checking this box enables high resolution scanning (86 lpi). Normal scanning resolution is 160 lpi.
8	Cassette Size	Click this button if the system does not automatically detect the cassette size. See “User Preferences 1 Tab” on page 6-2.
9	Status Bar	Indicates the status of the System by providing messages such as "Disconnected", "Ready" and so forth.
10	Procedures	Opens a predetermined selection of images connected to a specific medical condition. This button is displayed only after a procedure has been created. Procedure creation is described in “Procedure Mapping” on page 4-1.
11	Room	Selects X-ray room from a list. Room name or number definition is described in “Anatomical Tab” on page 6-11.
12	Reprocess	Presents a full set of image processing tools, including Black Mask editing.
13	Reset	Resets image to original image after the initial scan.
14	Invert	Inverts black and white tones on grayscale.
15	Brightness & Contrast	Enables the user to change the brightness and contrast of the image by dragging the cursor on the image.
16	Add Annotations Tab	Enables the annotation toolbar to add annotations to the image (L, R, up arrow, down arrow, and predefined annotation phrases). See “Adding Basic Annotations” on page 3-9.
17	Flip/Rotate Tab	Enables the flip/rotate toolbar that contains buttons for image rotation, (90°clockwise or 90°counterclockwise) and buttons for flipping image (horizontally or vertically).
18	Preview Thumbnail with image	Displays the scanned image(s) as a thumbnail. Each thumbnail can contain a different scanned image of the same study/exam.
19	Ready-to-Scan	Indicates the location of the next image that will be scanned.
20	Scroll Bar	Enables scrolling to preview thumbnails.
21	Delete	Deletes “ready to scan” thumbnails. The thumbnail will be grayed out.
22	Accept	Marks the image as accepted. Accepted images cannot be modified. If a default PACS station is available, the image will be sent to PACS automatically after acceptance.

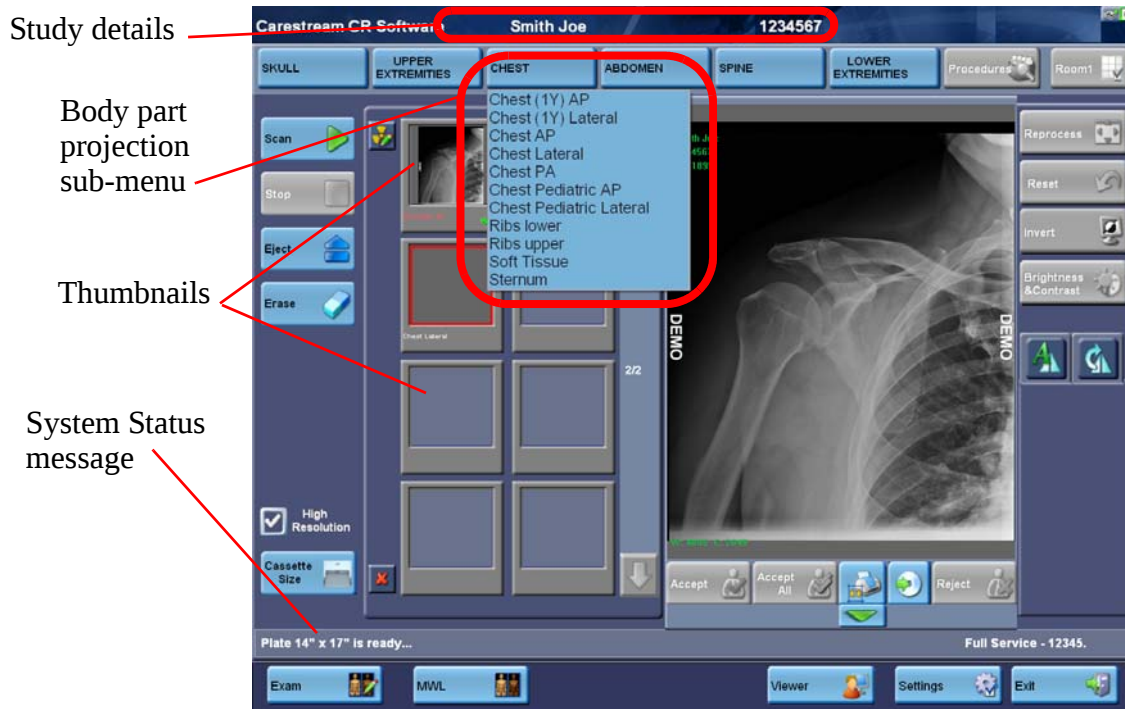
	Component	Description
23	Accept All	Accepts all thumbnail images. If a default PACS station is available, the images will be sent to PACS automatically.
24	Print	Sends the reviewed image to the default DICOM printer, in either "Fit To Size" or "True Size". For details, see “Printing Scanned Images” on page 3-11 .
25	Send to Media	Sends the reviewed image to CD/DVD or other removable storage.
26	Reject	Rejected images will not be sent to the PACS. See “Rejecting an Image” on page 3-12
27	Scanned Image Preview	Displays a larger preview of the scanned image.
28	Login Status	Indicates the type of User logged into the System.

Select Body Parts to Scan Select a body area such as chest or spine, then a body part and projection from the sub-menu that appears, or click **Procedures** and select a procedure that includes the desired body parts and projections. See [“Procedure Mapping” on page 4-1](#) for further information.



“Empty” thumbnail will become “ready to scan” thumbnail displaying the selected body part/projection. The top left thumbnail is the default thumbnail for the first image.

NOTE: The **Procedures** button is only enabled if there are Procedures configured. See [“Procedure Mapping” on page 4-1](#).



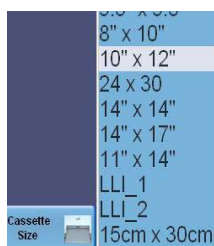
Select Body Sub-Part

Scanning Images

1. Load the cassette. Refer to the *CARESTREAM Vita CR System Hardware Guide* for information on loading cassettes.

NOTE: If the scanner is unable to read the cassette size, a **Cassette Size** button will appear. Click **Cassette Size**, and select the cassette size manually. The Cassette Size button opens a drop down list.

NOTE: The Cassette Size button will only appear if it has been configured to do so. See [“User Preferences 1 Tab” on page 6-2](#).



At this point, you may:

- Scan the screen by clicking **Scan**.

- Unload the screen by clicking **Eject**.
- Erase the screen by clicking **Erase**.

NOTE: If there is no action within two minutes, a message appears and the cassette is ejected automatically.

NOTE: If **Autoscan** was checked in the Setup screen, the scan starts automatically when the cassette is inserted, provided that an Organ and Sub-organ were chosen.

2. Click **Scan** to initiate scanning.

“Initializing Scanning” and then “Scanning” messages appear on the status bar.

To stop the scanning process, choose **Stop**; the scan process ends and the screen is automatically unloaded from the scanner into the cassette. The portion of the image that was scanned is saved.

NOTE: If the scanning process or erasing process was not completed, the cassette is not totally erased. You must manually erase the cassette before the next X-ray exposure to prevent double exposure.

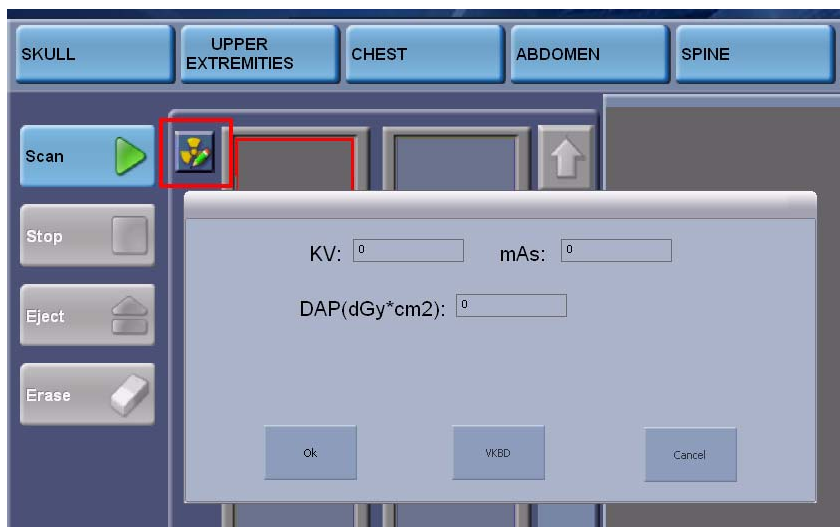
When the scanning process is complete:

- The image appears as a thumbnail in the gallery on the left side of the screen.
- Unless another selection is made, the cassette is erased automatically, and an “Erase” message appears in the status bar.
- If “Auto Erase” is not pre-selected in the Setup screen, the non-erased screen will be ejected at the end of the scan. To erase the screen, reload it, and click the **Erase** button (See [“Setup Tab” on page 6-8](#)).
- To initiate the scanning procedure of another cassette of the same Study, select a Body Area and Body Part. The next thumbnail will become “Ready to scan.” Repeat the steps described above.

Adding Exposure Parameters to the Image

As part of the imaging workflow, you may choose to add exposure parameter (KV, mAs, and DAP) tags to the image. This is done with the Exposure Parameters button.

1. Initiate a scan. See [“Scanning Images” on page 3-5](#).
2. Before clicking **Accept**, click the **Exposure Parameters** button. Fill in the exposure parameters used when exposing the screen. See the following figure:



3. When done, click the OK button.

Choosing Scan Resolution

As part of the imaging workflow, you can specify the scan resolution.

1. Load a cassette into the scanner. The scanner will determine the cassette size and whether or not it supports high resolution scanning.

NOTE: For details on supported cassette sizes and resolution capabilities for each cassette, refer to the *CARESTREAM Vita CR System Hardware Guide*.

2. If the cassette which has been loaded supports high resolution scanning, the high-resolution checkbox will appear. Click the checkbox to enable high-resolution scanning.

Changing Brightness and Contrast

1. Click **Brightness and Contrast**.



2. If using the mouse, right or left click and hold. Move the cursor across the image. Release the button when the settings are as required.

NOTE: If using a touchscreen, touch and move your finger over the image.

- Brightness is adjusted by horizontal movement
- Contrast is adjusted by vertical movement

Adding Basic Annotations

1. Click **Annotate**. The Annotation toolbar appears:



2. Select the Annotation type and click on the desired location on the image area. See the following table for descriptions of each control.

Button No.	Description ²³
1	Click to add the letter "R" (meaning Right) to the image
2	Click to add the letter "L" (meaning Left) to the image
3	Click to add a down arrow to the image. You can resize and move the arrow.
4	Click to add an up arrow to the image. You can resize and move the arrow.
5	Click to add free text annotations to the image. Enter text into the field, then click on the image to place the comment.
6	Click to add pre-defined annotations to the image. Choose from a pre-defined list.
7	Click to delete a selected annotation.
8	Click to select between small, medium and large font size for annotations.
9	Click to delete all annotations.
10	Click to resume Annotation mode.

Flipping or Rotating the Image

NOTE: The Flip/Rotate controls are available on both the Basic and Reprocess screens.

1. Click **Flip/Rotate**. The Flip/Rotate toolbar appears:



2. Click the required button to flip or rotate the image.

Printing Scanned Images

Print the scanned image to the default DICOM printer. The image will be sent to print in **true size** or **fit to size** according to the Print button selected in the Print drop-down list.



Button No.	Description
1	Click to print in the current mode
2	Click to select a different print mode from a dropdown menu

PrintDICOM Send Queue Management

To view and manage Print and DICOM send status items, such as:

- Resume/Pause print jobs in process
- Delete Print/DICOM jobs from the queue
- Pause print jobs in process

1. Double-click the **Print Queue Management** icon (located on the top right-hand corner of the screen. The Queue Manager dialog appears.



2. Click either the **DICOM** or **Printers** tab to manage available printers on the network.

Accepting an Image

1. Click on a preview thumbnail image to review the image.
2. Click **Accept** to accept and save the processed image¹ and, if available, send it to PACS, or click **Reject** to reject it. See [“Rejecting an Image” on page 3-12](#).
3. Click **Accept All** to send all images that have been scanned to PACS or to the hard drive.

You can return to the Exam or MWL window by clicking the appropriate button on the toolbar.

Rejecting an Image

If you reject the image, the unprocessed image will be saved in the local archive and will not be sent to PACS.

If you choose to reject an image (by clicking the **Reject** button), you can also attach a comment, which gives an indication of why the image was rejected.

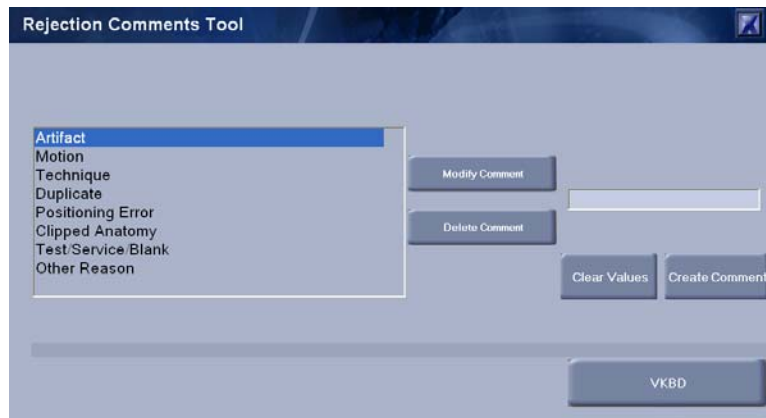
NOTE: Adding comments to rejected images is a purchasable option.

1. Click on a preview thumbnail image to review the image.
2. Click **Reject** to reject the image. The Rejection Comments dialog appears.



3. Enter the comment, or choose a comment from the list and select **OK**. The rejection comment will be saved and recorded to an internal report.
4. If necessary, you can add to or delete rejection comments.
 - a. From the Exam main screen, click the **Settings** button.
 - b. Choose **Rejection Comment Tool** from the drop-down list.

1. The “processed image” refers to the image with the markers, annotations, image direction changes that the operator made.



You can return to the Exam or MWL window by clicking the appropriate button on the toolbar.

NOTE: To get a Reject Analysis Report, see [“Rejected Analysis Report” on page 6-17](#)

Resetting an Image

Click **Reset** to reset the reviewing properties to the state the image was loaded as.

Erase

Erase the image on the cassette and eject the cassette.

Stop

Stop the scanning process. The scan process ends and the cassette is ejected.

Eject

Eject the cassette without scanning or erasing it.

Selecting a Room

A "room" represents a set of user defined parameters that correspond to a specific X-ray room, or any other room as specified by the radiologist or radiographer. Click **Room** and select the desired room.

Reviewing and Processing Scanned Images

1. Click any **Preview Thumbnail** button that contains a scanned image, which has not been accepted/rejected.
2. View the larger image in the image preview window.

NOTE: An accepted image cannot be reviewed in the Review window.

Advanced Reprocessing Tools

Clicking the **Reprocess** button gives the user convenient and quick access to a more extensive set of image processing tools. Refer to the following graphic to see the advanced set of image processing tools.



Button/Control No.	Button/Control Name
1	Apply Black Surround, Multi Exposure, Grid, Edit Mask, and body part selection
2	Brightness/Contrast, Invert, Magnification
3	Annotation/Orientation

Button/Control No.	Button/Control Name
4	PM Gain Setting (POC 120/140 only)
5	Edit Mask tools. See “ Applying Black Surround, Multi Exposure, Edit Mask, and Body Part Selections to an Image ” on page 3-15.

Applying Black Surround, Multi Exposure, Edit Mask, and Body Part Selections to an Image

Selecting the Edit Mask button provides access to the Edit Mask dialog.

Checking Edit Mask allows you to place a frame around the exact area of interest in an image. You can control the size, shape, and placement of the frame using the handle controls. Click and drag the handles to control the positioning of the frame.

NOTE: Frame placement and area of coverage effects overall image processing.

To Apply Black Surround to an Image

Black Surround is an imaging processing technique that applies black pixels to the collimated areas of an exposure. This helps the technician to better examine the resulting image.

1. Select an exam or study and acquire an image.
2. Once the image is acquired and appears in the preview screen, click the **Reprocess** button.



Image Without Black Surround Applied

3. Click the **Black Surround** box.

4. Click **Process**. The System applies the Black Surround cleanup.



Image With Black Surround Applied

To Apply Edit Mask to an Image

1. Select an exam or study and acquire an image.
2. Once the image is acquired and appears in the preview screen, click the **Reprocess** button.
3. Check the **Edit Mask** box. After a moment, a frame will appear over the image.

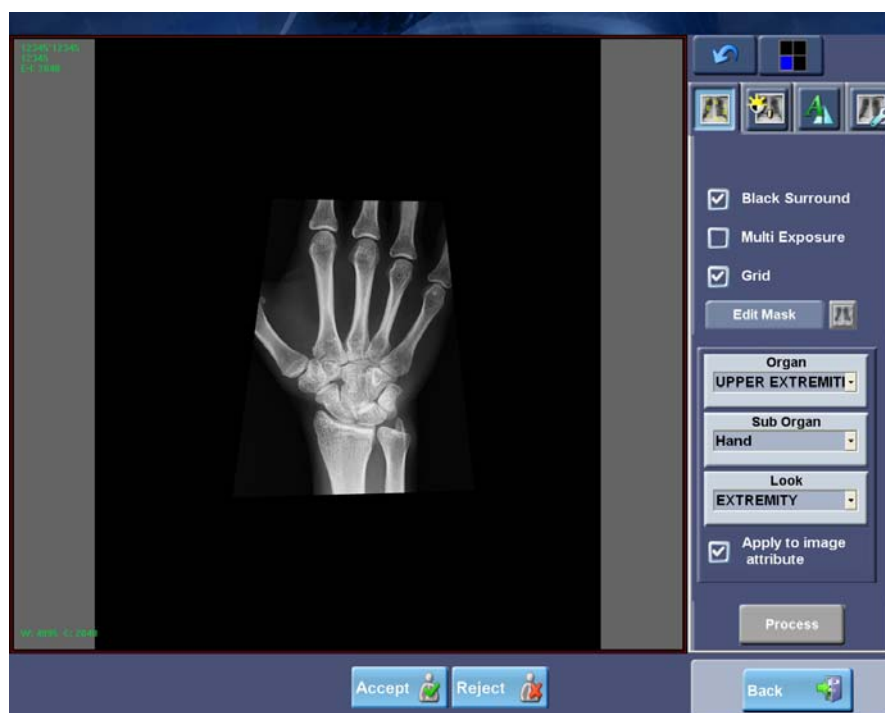
- Using the cursor, click and drag the handles to position the frame around the area of interest.



Frame Positioned Around the Area of Interest

- If necessary, click the **Image Border** button to reset the mask borders around the image, then make adjustments.
- Click the **Process** button to apply image processing to the area within the frame.
- If necessary, click **Back** to ignore changes.
- If necessary, click **Reset** to retrieve the original image.

9. Click **Accept** to approve the image.



The Result of Edit Mask Processing

To Apply Multi Exposure to an Image

The Multi Exposure tool allows you to automatically identify and mask the Multi Exposure region of interest areas in a scanned image, where two or more exposures were captured on one cassette.

NOTE: Depending on your site's imaging workflows, Multi Exposure can be configured to be enabled or disabled by default. See [“Setup Tab” on page 6-8](#) for details. The following procedure assumes Multi Exposure is not enabled or on by default.

1. Select a Study and acquire an image, using the normal multiple exposure workflow.
2. Once the multiple exposure image is acquired and appears in the preview screen, click the **Reprocess** button. The preview image appears without any Multi Exposure processing applied.



Image without Multi Exposure Applied

3. Check the **Multi Exposure** box.

4. Click **Process**. The System applies the Multi Exposure cleanup.



Image with Multi Exposure Applied

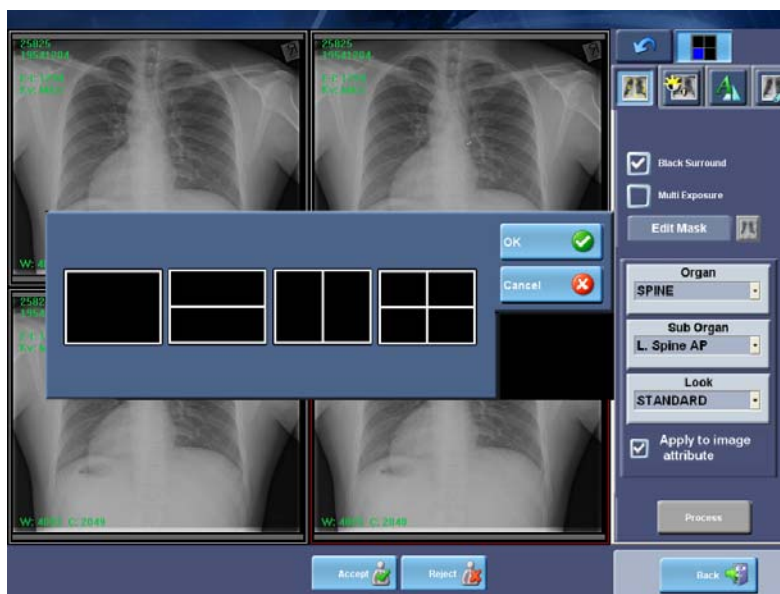
To Apply Different Processing to an Image

Image processing is a set of parameters applied to certain body parts. These parameter sets are known to be effective, based on the characteristics for each body part and region.

1. Select a study and acquire an image.
2. Once the image is acquired and appears in the preview screen, click the **Reprocess** button.
3. Select the **Multiple Frames** button.

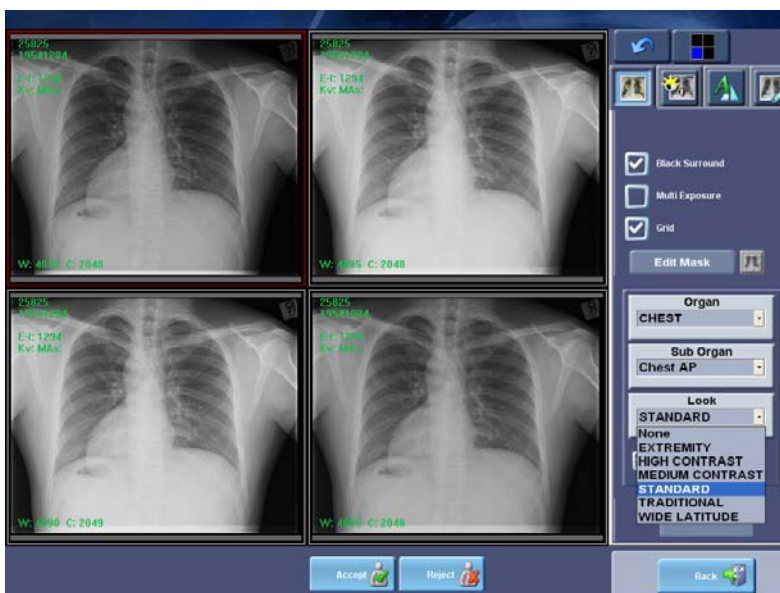


4. A window with a series of frames appears (1 pane through 4 panes). Click on the frame containing the number of panes you need, and click **OK**. See following figure:



Multiple Frames Selection

5. The scanned image will populate all panes, according to your previous selection. See following figure:



Scanned Image Loaded into Multiple Frames

6. Select one of the panes and apply image adjustments using the available image processing controls. Repeat the process for each pane.
7. Analyze each corrected image in each pane. Highlight the best image, and click **Accept**.

NOTE: You can configure Body Part and View parameters from the Advanced tab.

Setting Default Image Processing Parameters

Once image processing parameters have been successfully applied to an image, that Image Processing Look configuration can be set as a default in order to enable efficient image processing for future images. See [“Admin Tab” on page 6-13](#).

Adjusting Brightness and Contrast

The Reprocessing section offers much more robust Brightness and Contrast controls. See the following image and table for details.



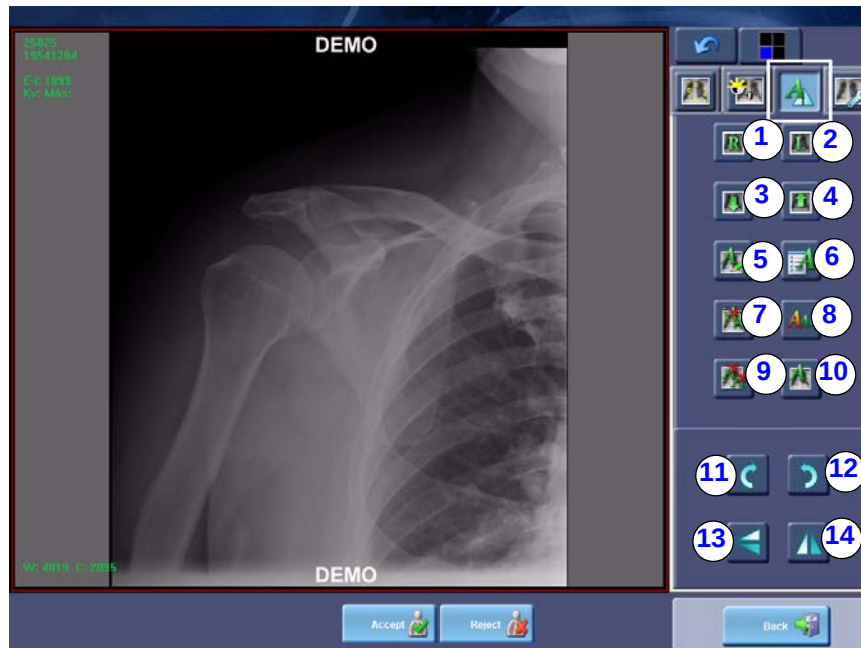
Button No.	Description
1	Adjust brightness and contrast of image
2	Invert image
3	Region of Interest (ROI) tool
4	Image histogram. Allows User to see pixel groupings in graph mode.
5	Fits image to screen (after having applied Zoom)
6	Pan image (only when in Zoom mode)
7	Zoom in and out

Adding Annotations and Markers to the Image

IMPORTANT: *The operator is responsible for the use of annotations. Incorrect use of annotations may cause errors in diagnosis.*

NOTE: The Annotations controls are available on both the Basic and Advanced Image Processing screens.

1. Click the **Reprocess** button.
2. Click the **Annotations** tab.
3. The Add Annotations toolbar appears. Review the graphic below to familiarize yourself with the controls:



Button No.	Description
1	Add "R" to image
2	Add "L" to image
3	Add down arrow to image
4	Add up arrow to image
5	Add free text annotation
6	Add predefined phrase
7	Delete a selected annotation
8	Choose annotation font size
9	Delete all annotations on image
10	Resume annotation mode
11	Rotate clockwise
12	Rotate counterclockwise
13	Flip vertical
14	Flip horizontal

Working with Previously Processed Images

In instances where the User/Operator would like to return to previous studies in order to perform more processing, the User/Operator can select the image, and use the Send To button to send the image to the correct processing area.



To Send Previously Processed Images for Further Processing

- 1. Choose the **Exam** button.
- 2. Select a study. The Study Content window will appear at the bottom of the screen.
- 3. Select an image to reprocess.
- 4. Click the **Send To** button. Select the area to send the image for further processing.



Area

Burn

Viewer

PACS

Area Description

Sends image to CD/DVD writing device (purchasable option).

Opens image in Viewer. See Working with the Viewer.

Sends image to PACS.

Area	Area Description
Group Images	Saves the selected images in a selected folder, containing pre-processed images, linear images, and processed images.
Print	Sends images to selected printers.
Reprocessing	Reprocessing selected images. See Reviewing and Processing Scanned Images.
Another Study	Moves the selected image to a different study.

NOTE: You are able to configure up to three commonly-used destinations for the buttons that appear on the Exam screen. An example is shown below. See [“User Preferences 2 Tab” on page 6-4](#).



4 Procedure Mapping

The Procedure Mapping tool is used to group logically related and/or often-performed groups of procedures for ease of selection and time savings during the scanning process.

To Create a New Procedure

1. Activate the Procedure Mapping tool by selecting **Settings > Procedure Mapping**.
2. Select a **Room**.
3. Click on the field **Procedure Name**; the field becomes enabled. Enter a name for the procedure.
4. Select an **Organ**; the Organ's Sub Organ list appears.
5. Select a Sub Organ, and then click **Add to procedure**; the Sub Organ appears in the Procedure Component List.

Note: Sub-organ can be added only once to each procedure.

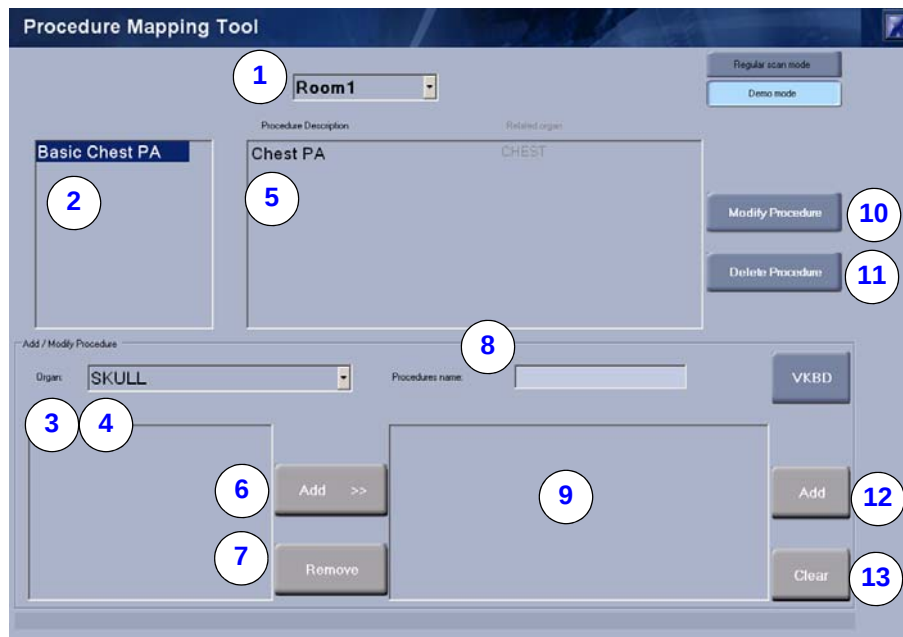
To remove selections, click **Remove** from the procedure.

To cancel the Procedure creation, click **Clear**.

6. When you have added all the Sub Organ positions that you require to the list in the Procedure Component list, click **Add Procedure**. The new procedure appears on the list of procedures.

To Modify an Existing Procedure

1. Select a Procedure from **Existing Procedures**.
2. Click **Modify Procedure**; the Procedure details will appear in the Procedure Name and Procedure Component List dialog boxes.
3. Use **Add to...** and **Remove from Procedure** buttons to modify the list.
4. Click **Add Procedure** to save.



Procedure Mapping Tool

#	Component	Description
1	Room	Name or number of the Room in which the procedure will be performed.
2	Existing Procedures	Names of existing procedures.
3	Organ	List of Organs.
4	Sub-Organ	List of Sub Organ positions available for the selected organ.
5	Procedure Description	Shows the Sub Organs included in the selected Procedure in the Existing Procedures List.
6	Add to Procedure	Select a Sub Organ, then click this button to include the procedure being created/modified.
7	Remove from Procedure	Click to remove a Sub Organ from the procedure being created/modified.
8	Procedure Name	Type in the new procedure name.
9	Procedure Component List	List of Sub Organs positions selected to be included in the procedure being created.
10	Modify Procedure	Select the Procedure to modify from the existing procedures.
11	Delete Procedure	Deletes the procedure.
12	Add Procedure	Click to accept and save the procedure being created/modified.
13	Clear Values	Clear details of the Add/modify procedure process.

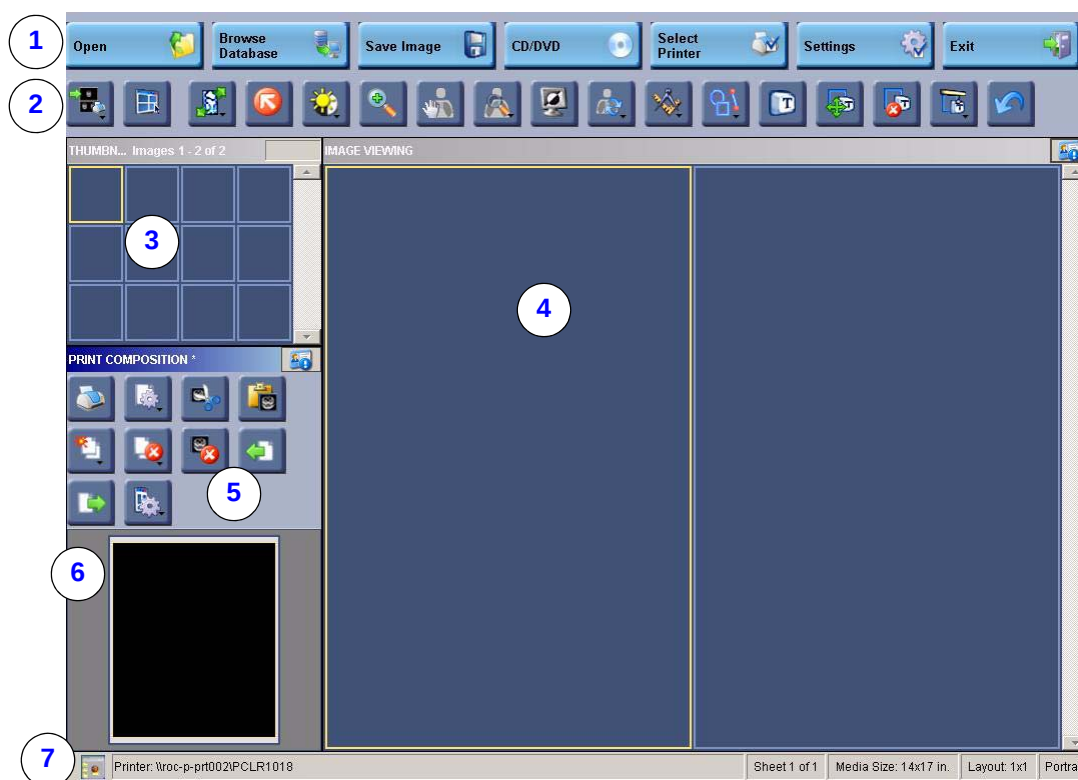
5 Working with the Viewer

Use the Viewer Application to:

- Load, view, and adjust previously acquired images.
- Build a composition of images for printing.
- Build a compilation of images and write them to CD or DVD.
- View images from any IHE-compatible CD.

To open the Viewer Application, click **Viewer** on the main toolbar.

Overview: The Viewer Application



#	Component		Description
1	Main Toolbar		Access the main features.
2	Image Editing Toolbar		Use the tools to adjust and annotate the images. Apply the Image Editing tools to images in the Viewing Pane and in the Print Composition Pane.
3	Thumbnails Pane		Images load first into this pane. Preview the images here and select the first image to view in a larger size.
4	Viewing Pane		Work with the images in this pane. View, adjust, and annotate the images.
5	Print Composition Toolbar		Use the tools to navigate in and work with the Print Composition.
6	Print Composition Pane		Move images to this pane to build a composition (a group of images) to print. You can also view, adjust, and annotate the images here.
7	Hide or show the Search Window		Click the icon to show or hide the Search Pane. The default is off.

Workflow

There are several options for working in the Viewer Application. You can adjust the steps to your preferences and to your site workflow.

Basic Step	More Details	Where to Find the Instructions
Send to Viewer	The images load into the thumbnails Pane. To load the images, do one of the following: 1. Preselect and load the images from the CR Systems Software. The images automatically load into the Thumbnails Pane when you enter the Viewer Application. 2. Open the images after you have entered the Viewer Application.	If the images are not already loaded when you enter the Viewer Application, do one of the following: 1. Browse the CR Systems Software database for previously acquired images, or open files from the hard drive. See “Opening Images in the Viewer Application” on page 5-5. 2. Load images from an IHE-compatible CD. See “Retrieving Images to View from Disc” on page 7-4.
Load the thumbnail images into the Viewing Pane or the Print Composition Pane.	You can move thumbnail images into either pane: In the Viewing Pane, you can view and adjust images. In the Print Composition Pane, you can view, adjust, and print images.	To load the thumbnail images into the Viewing Pane or the Print Composition Pane, see “Viewing and Adjusting Images” on page 5-8. See “Working in the Viewing Pane versus Print Composition Pane” on page 5-4 for a comparison of the panes.
View, adjust, and/or annotate images.	Work with images in the Viewing Pane or the Print Composition Pane.	For instructions to view, adjust and/or annotate images in the Viewing Pane or the Print Composition Pane, see “Adjusting Images” on page 5-9.
Print the images.	Use Print tools to send images to predefined printers.	To print, compose your images in the Print Composition Pane. If you have been working in the Viewing Pane, move the images into the Print Composition Pane. For instructions, see “Print Composition” on page 5-12.

Basic Step	More Details	Where to Find the Instructions
Write the images to a CD/DVD.	This is a purchasable option. Select images and send them to be burned to a CD/DVD device.	To write to a CD/DVD, use the Disc Publishing Wizard to set up the disc. Then build the image compilation and write. You can build a compilation with images from the Thumbnails Pane or the Viewing Pane. For instructions, see “Study/Archive CD/DVD” on page 7-1.

Working in the Viewing Pane versus Print Composition Pane

You can view and adjust images in the Viewing Pane or in the Print Composition Pane. See the table for a comparison, and to understand why you might work in one pane or the other.

Feature	Viewing Pane	Print Composition Pane
Displays images in the desired size, including true size.	Yes	Yes
Allows use of the image editing and annotation tools to adjust images.	Yes	Yes
Allows you to save image edits.	Yes	No
Provides traditional image viewing layouts.	Yes	Yes
Provides flexible image layouts. Non-matrix layouts are provided, and you can create custom layouts.	No	Yes
Build a composition of images, apply tools as needed (for example, use the Optimize Layout tool), and print.	No	Yes

Opening Images in the Viewer Application

Task	Icon	Description
Browse Database		Open images that have been acquired by the CR Systems Software. See “Browsing the Database” on page 5-5.
Open		Select images to open from a local hard drive. See “Loading Files from a Local External Hard Drive” on page 5-6.

NOTE: For optimal viewing and system speed, limit the file size of the images in the Viewer Application to 200 MB. The following combinations equal approximately 200 MB:

- 35 x 43 cm (14 x 17 in.) cassette—5 images scanned at high resolution, or 10 images scanned at low resolution
- 25 x 30 cm (10 x 12 in.) cassette—10 high resolution images
- 35 x 35 cm (14 x 14 in.) cassette—6 high resolution images

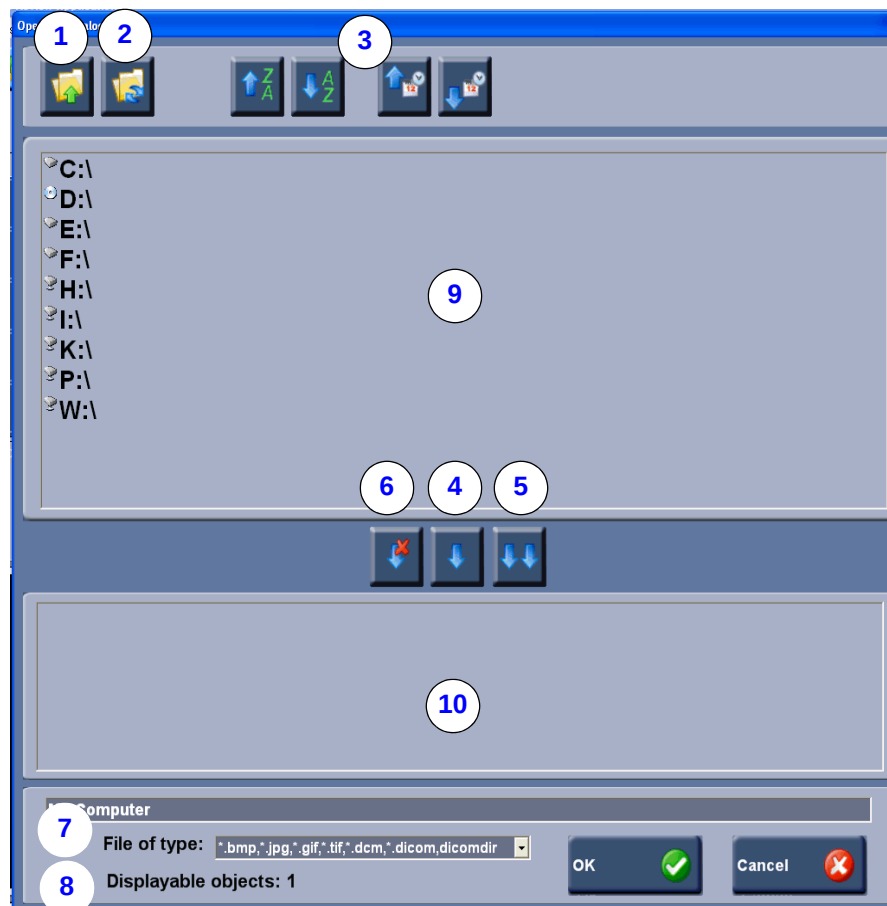
Browsing the Database

1. Click **Browse Database** on the Main toolbar.
2. Search for and select the study. The studies appear in the Study list.
3. All study images appear in the Image Viewing area.

NOTE: To select multiple studies, select **Multi Selection** on the right side.

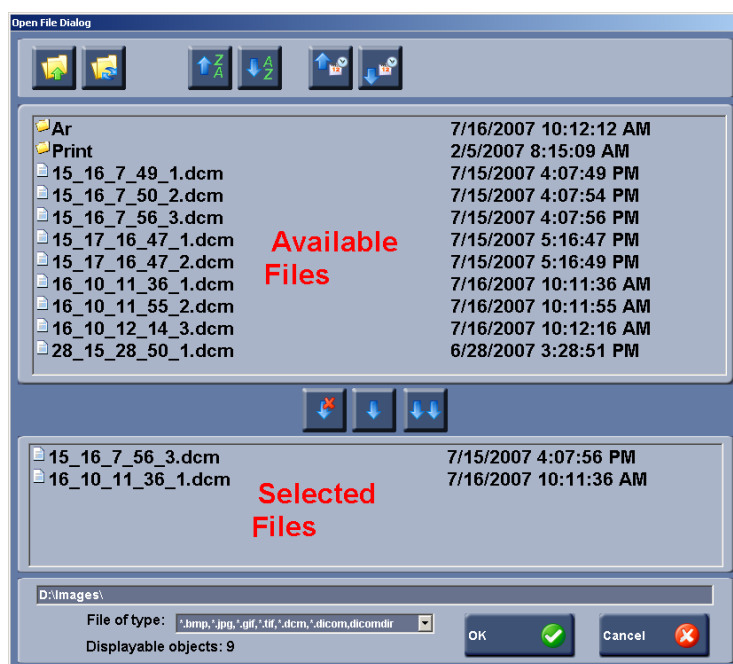
4. Click **Exit** to load the selected images into the Viewer Application.

Loading Files from a Local External Hard Drive Click **Open** on the Main Toolbar. The following screen appears:



#	Component	Description
1	Up	Click to browse to a higher folder in the file structure.
2	Refresh	Click to refresh the drives. (For example, to display a portable drive that you just connected.)
3	Sorting	Sort files by study or exam time or date.
4	Single File Selection	Click a file name in the Available File Pane to highlight it, then click Selection . The file name will appear in the Selected File Pane. When you have selected all the files you want to view, click OK to transfer them to the Viewer.
5	Multi Selection	Select all files in the Available File Pane.
6	Cancel Selection	Click one file name in the Selected File Pane, then Cancel Selection to cancel the selection of that file.

#	Component	Description
7	File of Type	Limit the file types that appear for selection.
8	Displayable Objects	Number of files available for selection.
9	Available Files Pane	Files in the drive or folder that can be selected to be viewed.
10	Selected Files Pane	Files that you have selected to send to the Viewer, but have not sent yet.



Viewing and Adjusting Images

You can view and adjust images in the Viewing Pane or in the Print Composition Pane.

NOTE: See [“Working in the Viewing Pane versus Print Composition Pane”](#) on page 5-4 for a comparison of the panes.

Using the Viewing Pane

To load images into the Viewing Pane, drag a thumbnail image into the Viewing Pane.

The image appears, selected (with a border around the image) in the Viewing Pane.

Using the Print Composition Pane

As an alternative to viewing and adjusting images in the Viewing Pane and then moving them to the Print Composition Pane for printing, you can view and adjust images directly in the Print Composition Pane.

To move images into the Print Composition Pane, do either of the following:

- Drag a thumbnail image into the Print Composition pane. Only the dragged image displays in the Print Composition and not the whole set of images. It displays in the image frame where you drop it.
- Click the **Compose All** tool to move all thumbnail images into the Print Composition. New pages are added automatically for all the images in the set.

Adjusting Images

Working with the Image Editing Tools

Use the Image Editing Tools to adjust images in the Viewing Pane and the Print Composition Pane.

Task	Icon	Description
Compose All		Move the group of images in the Viewer Application into the Print Composition pane. If the Thumbnails pane is active, all images from the Thumbnails pane move to the Print Composition pane. If the Viewing pane is active, all images, including any image adjustments and annotations, move to the Print Composition pane.
Layouts		Open the Layouts dialog box to change the image layout for the active pane (Viewing Pane or Print Composition pane). Viewing pane – The Layouts dialog box presents matrix image layouts. Print Composition pane – The Layouts dialog box presents matrix, non-matrix, and any custom layouts. The layout choices are different because the panes can be used differently. The Viewing pane is available for traditional on-screen image viewing. Matrix layouts provide the best use of the screen space with maximum viewing area. The Print Composition pane provides maximum image layout flexibility so you can easily arrange and print the images to suit your needs. For instructions to create custom layouts for the Print Composition pane, see “Print Composition Custom Image Layouts” on page 5-21.
Resize Images		Specify how the image displays: Fit to View (default) – Sizes the image to fit in the image frame. NOTE: If the image is reduced or enlarged, it is indicated on the image with a Scissors icon. The scale factor also displays on and prints with the image. True Size – Displays the image in the size it was captured. When True Size is selected, it remains the default until another set of images is loaded.
Select		Return the cursor to selection mode. Exit from an edit mode.

Task	Icon	Description
Window Width/Level		Adjust the Window W/L: Dynamic Window Width/Level – Drag along the vertical axis of the image to modify the contrast. Drag along the horizontal axis to modify the brightness. Presets – Apply predefined W/L values based on modality and body part. Revert to Default – Undo any W/L changes and restore the original image.
Zoom		Zoom in or out from the image. Drag up to zoom in, drag down to zoom out. Drag to the top of the image frame to display the image in true size.
Pan		Drag the image to move it within the image frame. This tool does not apply when the full image displays in the frame.
Magnifying Glass		Magnify an area on the image. Select the magnification level and click the image. Drag your finger to move the magnifying glass and magnify different places on the image. Click again to close the magnifying glass.
Invert		Invert the gray scale.
Orientation		Select an option to rotate or flip the image.
Measurements		Measure a length, angle, or Cobb angle on the image. Select the end points on the image and the measurement displays as an annotation on the image.
Drawing		Draw a line, arrow, circle, or rectangle to point out an area of interest. Select the shape, click the image, then drag the shape to the desired size.
Text Annotation		Add a text note to the image. Click the tool, click the image where you want the text to display, and a virtual keyboard opens to enter the text.

Task	Icon	Description
Edit Annotations		Change or move a note or shape on the image. To move the annotation – Click the tool, click the annotation, then drag it to the desired place. To edit the text – Click the tool, click the annotation, release the click, and a virtual keyboard opens to enter or change the text.
Delete Annotations		Delete a note, shape, or measurement on the image. Click the annotation, and then click the tool.
Show/Hide Overlays and Annotations		Click to open a drop-down list to select whether to show or hide overlays and annotations: Overlays – Descriptive information that came with the image, for example, study information and markers. Annotations – Text notes, shapes, and measurements that are added to the image at the Viewer Application. Click the item to show or hide. The asterisk to the left of Overlays or Annotations in the drop-down list indicates that Show is enabled; without the asterisk, the item is hidden.
Reset		Restore the original image settings.

Saving Images

You can save images with the edits you have made to the exams database. Click **Save Image** to save the selected image. Saving overwrites the original captured image.

NOTE: Some image adjustments are not saved. For example, if you apply Pan and Zoom to the image, those adjustments are not saved.

Print Composition

Moving Images to the Print Composition Pane To move images into the Print Composition pane, you can:

- Drag an image into the Print Composition pane.
 - When you drag an image from the Thumbnails pane, the image is the same as when it was loaded.
 - When you drag an image from the Viewing pane, any image adjustments, annotations, etc., move to the Print Composition pane with the image.
- Click the **Compose All** tool on the main toolbar to move all images into the Print Composition pane.
 - When the Thumbnails pane is active, all images from the Thumbnails pane move to the Print Composition pane. The images are the originally loaded images.
 - When the Viewing pane is active, all images from the Viewing pane, along with any image adjustments, annotations, etc., move to the Print Composition pane.

Working with Images in the Print Composition Pane

To work with images in the Print Composition pane, click the **Print Composition** pane to make it active. When the images display in the Print Composition pane, do any of the following:

Tool	Icon	Description
Layouts		Change the selected image layout. The Layouts dialog box presents matrix layouts, several non-matrix layouts, and any custom layouts. For instructions to create custom layouts, see “Print Composition Custom Image Layouts” on page 5-21.
Edit	Use the Image Editing tools	See “Working with the Image Editing Tools” on page 5-9 for instructions.
Delete		Delete – Click the image to delete, then click Delete .

Tool	Icon	Description
Cut		Reorganize images on the page or between pages: Cut – Click the image to select it, then click Cut . The Cut tool assumes you will paste next.
Paste		Paste – Click the image frame where you will paste the image that you cut, then click Paste . NOTE: To let two images trade image frames, or swap locations, on the page, drag Image 1 and drop it on Image 2. Image 1 takes over the image frame of Image 2, and Image 2 appears where Image 1 previously displayed.
Add Page options		You can add a page or delete a page from the Print Composition. Add Page options – Add a page at the end of the Print Composition, or before or after the current page.
Delete Page options		Delete Page options – Delete the current page or all pages. When you use the Compose All tool to move a set of images into the Print Composition, new pages are created automatically so that all the images fit.
Previous Page		When the Print Composition has multiple pages, use the navigation buttons to move back and forth: Previous Page – Moves the Print Composition to the previous page.
Next Page		Next Page – Moves the Print Composition to the next page. The current page number and page count display on the status bar.
Advanced options		Use the Advanced options to minimize the amount of media used and optimize the image layout: Minimize Media – The images are arranged in the Print Composition to make the best use of the media. Images are moved to fill in empty spaces as possible. Empty pages are deleted. Optimize Layout – The images are arranged in the Print Composition for the best layout based on the image types. Empty spaces are eliminated, and image orientation may be changed to place more images on each page.

Printing Images

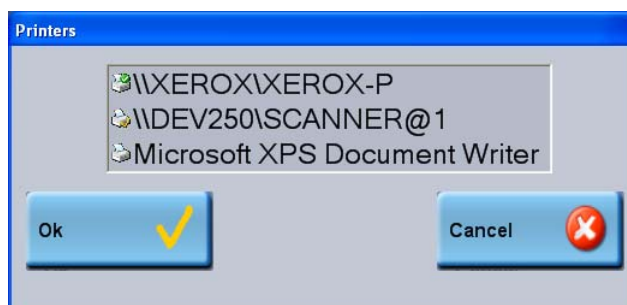
When you are ready to print the Composition, see the following:

Tool	Icon	Description
Print		Initiates the print request. To select a different printer, click Printer Settings on the Main Toolbar.
Page Setup		Change the selected: Page orientation Media size and type You can always view the selected page orientation, media size/type, and printer on the status bar.

Printer Settings

Some of the features in this section require use of a keyboard and mouse.

To open the Printers dialog box, click **Select Printer** on the Main Toolbar.



The dialog box shows the current default printer for the WINDOWS operating system and the one or multiple printers that are selected for printing in the Viewer Application. See the table to understand and use the dialog box to change printer selections:

Icon	Description
	Indicates the default printer. All print jobs are delivered to the default printer. To change the default: Click to deselect the current default printer. Click a different printer in the list. Click Default. This changes the computer's default printer (at the operating system level). Only one printer can be selected as the default.
	Indicates a selected printer. The next print job will be delivered to all printers with this icon. To change the selected printer(s): Click to select one or multiple printers. Click OK. The next print job will be sent to all selected printers. Jobs will continue to be sent to these selected printers until you re-enter the dialog box and make a change. When you select a printer and then click OK, any previously selected printers will become de-selected and jobs will not be delivered to them. Before clicking OK, select each desired printer(s) in the list, including printer(s) already checked with the yellow check icon.

Icon	Description
	Indicates an unselected printer.

To exit from the dialog box without making any changes, click **Cancel**.

Image Adjustment

NOTE: Connect a keyboard and a mouse to the computer to continue with this utility.

The DICOM Image Adjustment Wizard lets you adjust DICOM grayscale images. Optimize images from a modality to a printer by adjusting the image processing parameters to your preferences.

NOTE: The default image processing parameters produce acceptable printed images for most users. However, if the images do not meet your preferences, use the wizard to adjust the image processing parameters.

1. To start the wizard, click **Settings**, then **Image Adjustment**.
2. Answer the questions on the wizard screens, and retrieve and review test prints, as prompted.

If you need help while going through the wizard, see the table:

Screen	Help
Welcome	You must have already sent an image from the image source to the printer. For example, if you will adjust CR images, send one to the printer before you begin this procedure. Browse to select a grayscale image from the image source that you want to adjust.
Verify Image Source	The image file you selected at the Welcome screen provides information about the image source. At this screen, the information appears. Confirm that the information is correct for the image source you want to adjust. If the information is incomplete, the file you selected did not provide all of the expected information. To provide the best recommendations for the image processing parameters, you may want to click Back to select another image. If the information is not what you expected, for example, the image source is not correct, then you may not have selected the file you intended. Click Back to return to the Welcome screen and select another image.
Select Printer	The configured printers appear in the list.

Screen	Help
Remove Parameters	If this screen appears, the modality and printer combination have previously been set up in the wizard. The previously chosen parameters listed on the screen may or may not be the same as the recommended parameters. "Show me the parameters that were previously set up and the default recommendations." As you go through the wizard, the previously chosen parameters and the recommended parameters display. You can keep or change any of the parameters. "Remove the parameters that were previously set up." The wizard will only show the recommended parameters. The previously chosen parameters are no longer applied. You can keep or change any of the recommended parameters. "Remove all parameters for this image source and printer." No image processing parameters are applied. You are taken to the Finish screen where you can exit from the wizard or start again.
Recommended Touchscreen (TFT) (LCD) Set	This screen appears if you selected a laser imager that supports TFT Sets. The screen displays the recommendations for TFT Set and Contrast based on the selected image source and printer. "Use the recommended parameters. Print test images..." A set of test pages prints your image with the recommended parameters applied. Select your preferred image from the test pages. If you do not like any images on the test pages, you can change the parameters on the screens that follow. If you specified on the Remove Parameters screen to see the parameters that were previously chosen, they also print on the test pages. "Do not use the recommended parameters..." The wizard lets you select a different TFT Set and/or Contrast. "I know the parameters that I want to use..." The wizard lets you enter a different TFT Set and/or Contrast.
Select TFT Set	If you are not sure which TFT Set and Contrast to use, print your image with TFT Sets and multiple Contrast settings applied. On this screen, click one or multiple TFT Sets to print your image with the TFT Sets applied. The Total pages count provides the number of pages that will print.

Screen	Help
Recommended Wet Parameters	This screen appears if you selected a printer that supports wet processing. The screen displays the recommendations for Wet Contrast and Curve Shape based on the selected image source and printer. "Use the recommended parameters. Print test images..." A set of test pages prints your image with the recommended parameters applied. Select your preferred image from the test pages. If you do not like any images on the test pages, you can change the parameters on the screens that follow. If you specified on the Remove Parameters screen to see the parameters that were previously chosen, they also print on the test pages. "Do not use the recommended parameters..." The wizard lets you select a different Wet Contrast and Curve Shape. "I know the parameters that I want to use..." The wizard lets you enter a Wet Contrast and Curve Shape.
Review Test Images	If there is not an acceptable image, click No to enter different parameters.
Select Image Number	Locate the image number on the test page with the image.
More Parameters	This screen provides more recommended image processing parameters. Depending on the selected printer, recommendations are listed for Dmax/Dmin/Smoothing Type or Dmax/Dmin/Interpolation. "Use the recommended parameters. Print test images..." A set of test pages prints your image with the recommended parameters applied. Select your preferred image from the test pages. If you do not like any images on the test pages, you can change the parameters on the screens that follow. If there is only one set of recommended parameters and they have already printed on a test page, the Finish screen appears. If you specified on the Remove Parameters screen to see the parameters that were previously chosen, they also print on the test pages. "Do not use the recommended parameters..." The wizard lets you select different settings for Dmax/Dmin/Smoothing Type or Dmax/Dmin/Interpolation. "I know the parameters that I want to use..." The wizard lets you enter a setting for Dmax/Dmin/Smoothing Type or Dmax/Dmin/Interpolation.

Screen	Help
Print Dmax Settings, Print Dmin Settings, Print Wet Contrast Settings	If you are not sure which Dmax, Dmin, or Wet Contrast settings to use, print your image with the selected settings applied. On these screens, click one or multiple settings, or click Print all if you want to print your image with all of the settings applied. The Total pages count provides the number of pages that will print.
Select Parameter, Select More Parameters	On these screens, you enter the parameters without help from the wizard. Select the parameter from a drop-down list of the available choices.
Finish	This screen lists all the settings you selected or entered. When you click Finish, the settings are saved and applied to all images that are sent from the image source to the selected printer. Record the parameters that are listed on the Finish screen, and put the list in a safe place. This list will save you time if you need to restore the system for any reason. Click Finish to exit and save. Click Next to return to the Welcome screen and repeat the process for another image source and/or printer.

Monitor Calibration

NOTE: Connect a keyboard and mouse to the computer to continue with this utility.

The Monitor Calibration Wizard helps you adjust your monitor's color and contrast for optimal image viewing. Use your own image or view a SMPTE test pattern as you adjust the monitor.

1. To start the wizard, click **Settings**, then **Monitor Calibration**.
2. Answer the questions on the wizard screens, and retrieve and review test prints, as prompted.

If you need help while going through the wizard, see the table:

Screen	Help
Welcome	Choose an option: SMPTE pattern. Provides a pattern of squares that display a full range from white to black, including the percentage of gray in each square. 100% = white, and 0% = black. You will use the monitor controls to adjust color and contrast until you can see appropriate variance in each square. My image. Click the field and click Browse, then find and open your own image. You may want to select an image that has a good range of colors. You will use the monitor controls to adjust color and contrast until you like how the image appears on the monitor.
Select Image Display	Choose an option: Keep the image's proportions. Displays the image or pattern with the same aspect ratio, or proportions, of the original file. The SMPTE pattern displays in a portrait format with borders on the left and right sides. Expand the image to display on the full screen. Uses the full screen to display the image or pattern. The SMPTE pattern is stretched horizontally to display on the full screen.
SMPTE or Image Display	Use the monitor controls to adjust color and contrast. When finished, click the image.
Finish	Click Finish to exit. Click Next to return to the Welcome screen and repeat the process.

Modality Default Image Layouts

View or modify the image layout defaults for each modality and for the number of images in the set.

1. Click **Settings**, then **User Preferences**.
2. Locate the modality and click the default to change. Select the number of images and then the default layout.
3. Click **Save**.

Modality Preferences

View or modify Window Width and Level defaults by modality.

1. Click **Settings**, and then **Modality Preferences**.
2. Click **Add/Modify Presets**.
3. Click or type an exam type.
4. Complete the fields and click **Save**.

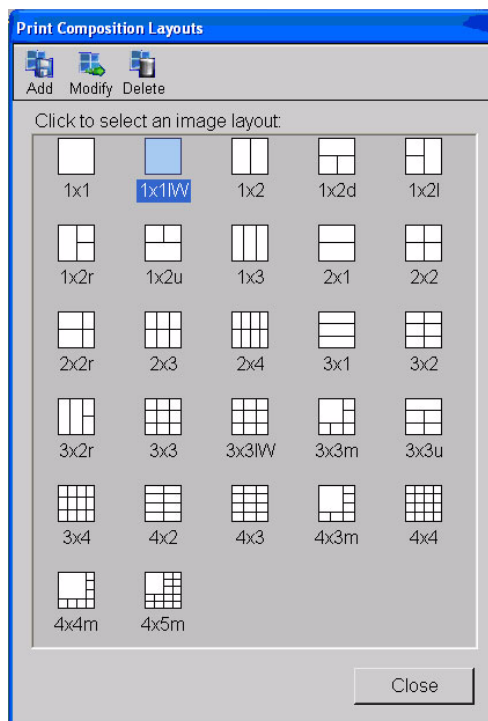
Print Composition Custom Image Layouts

This section provides instructions to manage custom layouts.

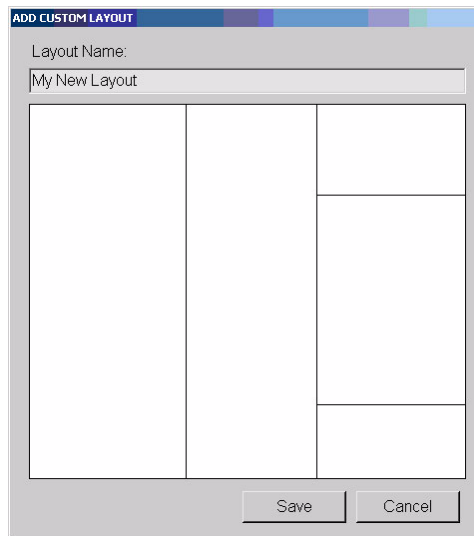
NOTE: To change the image layout in the Print Composition Pane, see [“Working with the Image Editing Tools” on page 5-9](#).

Adding a Custom Layout

1. Click **Settings**, and then click **PC Image Layouts**.



2. Click **Add**.



NOTE: You can also modify an existing layout as a base for the new layout.

3. Enter a descriptive name in the Layout Name field.
4. In the layout window, click and drag the frame border to create the desired layout. The dividers become the frame borders for the images. To add a divider to the layout, move the cursor to the edge of the window until the cursor changes. Hold and drag until the divider is where you want it.
 - Place the cursor on a divider to move it.
 - Place the cursor next to a divider, then drag out to create another divider.
 - Continue until you have the desired layout.
5. Click **Save**. The layout becomes available in the Print Composition Layouts dialog box.
6. Click **Close**.

Modifying a Layout

1. Click **Settings**, then **PC Image Layouts**.
2. Click the layout to modify.
3. Click **Modify**.
4. For the Layout Name field:
 - Leave the name unchanged to permanently modify the selected layout.
 - Change the name of the layout to save the original layout and the modified layout.
5. In the layout window, click and drag the frame border to

create the desired layout. The dividers become the frame borders for the images. To add a divider to the layout, move the cursor to the edge of the window until the cursor changes. Hold and drag until the divider is where you want it.

- Place the cursor on a divider to move it.
 - Place the cursor next to a divider, then drag out to create another divider.
 - Continue until you have the desired layout.
6. Click **Save**. The layout becomes available in the Print Composition Layouts dialog box.
 7. Click **Close**.

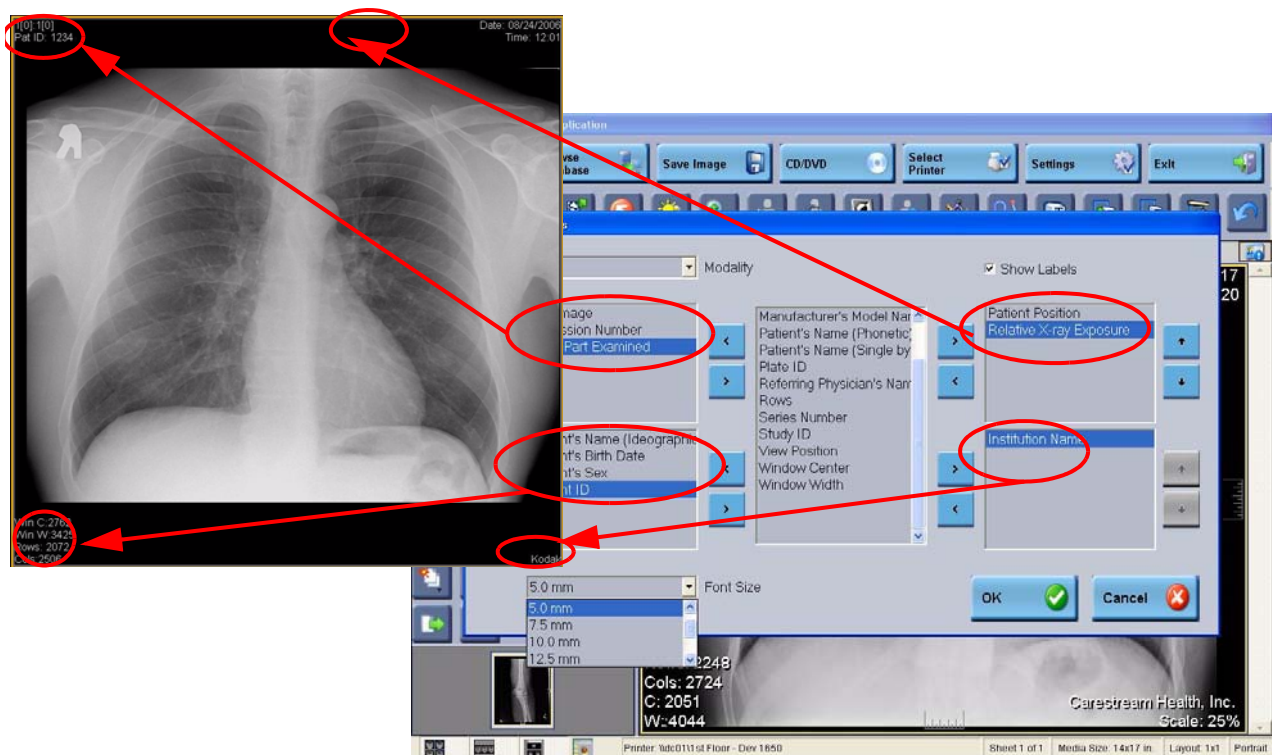
Deleting a Layout

1. Click **Settings**, then **PC Image Layouts**.
2. Click the layout to delete.
3. Click **Delete** and confirm.
4. Click **Close**.

Configuring Overlays

To add or remove overlays for the displayed and printed images:

1. Click **Settings**, then **Configure Overlays**. The following screen appears.



2. Select a modality if desired.
3. Select the items from the main list, and add each item to a corner. The items will display as overlays in the specified corners when you display and print the images after you restart the application.
4. To remove an item from the overlay, select the item and click the arrow button pointing toward the main list.

Changing Font Size

While in **Settings>Configure Overlays**, you can click on the **Font Size** box and determine the font size in the Viewer image review window. After selecting a new font size, exit and re-enter the Viewer for the change to take effect.

Backing up and Restoring Settings

You can make a backup of the configuration settings. This backup will save you time if you need to reinstall the software or restore the system. The backup includes user preferences, modality preferences, and any custom layouts.

- To make a backup: Click **Settings**, then **Back up Settings**. Follow the prompts to select a directory where the backup files will be saved.
- To restore the backup: Click **Settings**, then **Restore Settings**. Follow the prompts to specify the directory where the backup files were saved.

6 Advanced Settings

The Settings tool is used to access and configure advanced features of the CR Systems Software. The available tabs depend on the user's designation:

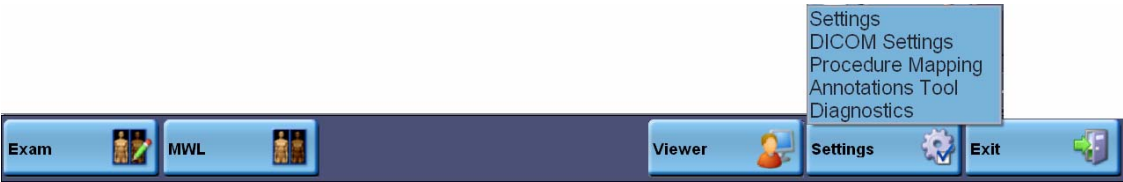
NOTE: Advanced Settings, accessible only to the full service level operators, are described in the CARESTREAM Vita CR System Service Manuals.

Tab Name	Full Service Access Level	Operator Access Level	Key Operator Access Level
Admin	x		x
Advanced	x		
About	x	x	x
Maintenance	x	x	x
User Preferences 1	x	x	x
User Preferences 2	x	x	x
Setup	x		x
Anatomical	x		x
Diagnostics	x		
SW Update and Backup	x		x
Calibration	x		

Operator Tabs

Certain parameters may be set for local clinic preferences: birth date format, the default screen that appears when the software is launched, study detail fields that are mandatory, and display tags that appear when an image is displayed. There are two tabs for these preferences settings. To access the User Preferences tabs,

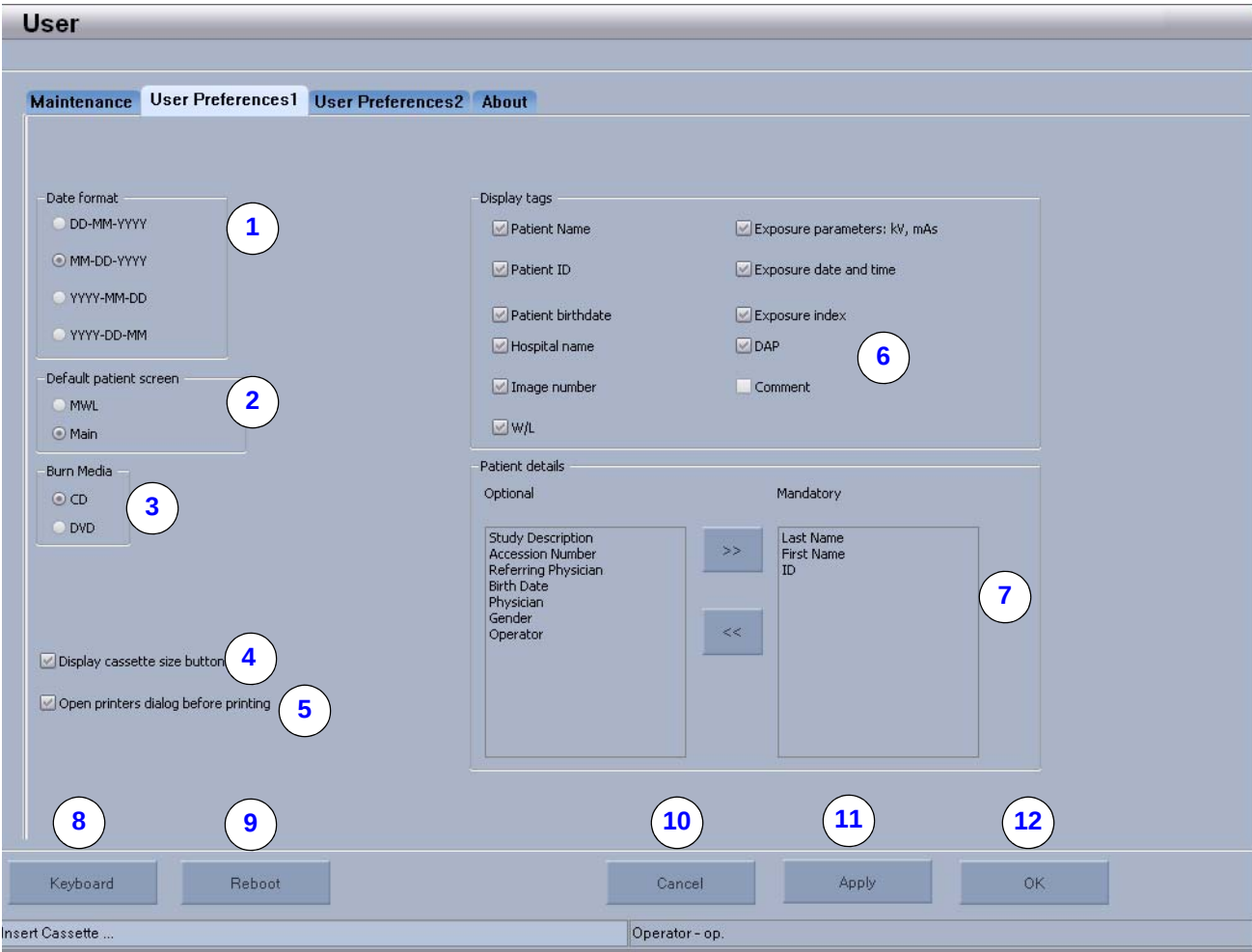
1. Click **Settings**.
2. Select **Settings** from the menu that appears.



Key Operator Settings Options

User Preferences 1 Tab

The User Preferences tab is accessible by all user levels. It contains parameters that may be set for local clinical preferences, including data format, the default screen that opens when the interface is opened, patient detail field settings, and which display tags can be used.



User Preferences 1 Tab

#	Component	Description
1	Date Format	Choose the date format required by your facility's imaging workflow and/or policy.
2	Default Study Screen	Determines whether the Manual or MWL Study list will be displayed by default. MWL—Operator chooses from study list. Exam—Operator enters the study details.
3	Burn Media	This option is for the Burn CD/DVD from Image storage. Choose between CD or DVD writing.
4	Display Cassette Size	When checked, the Cassette Size button will be displayed on the scan screen, and the operator can select the cassette size. If not checked, the Cassette Size button will appear only if there is a problem with the barcode reader.
5	Open Printers Dialog	When checked, allows the operator to choose different print options.
6	Display Tags	Select the tags (values) that will appear on the image window after a scan.
7	Study Details	Determines which fields will appear on the manual study selection screen. Mandatory Study Details: • Are displayed in red letters • Have a red asterisk to the right of the field name • Last Name, First Name, and ID are defaults and cannot be transferred from the mandatory list • Other details may be set as mandatory To transfer study details between the mandatory and optional lists: 1. Select the study detail 2. Click the right or left arrow to move the detail to the desired list
8	Keyboard	Activates the on-screen virtual keyboard.
9	Reboot	Switches the System off and on.
10	Cancel	Cancels all changes made on the screen.
11	Apply	Saves and applies all changes made on the screen.
12	OK	Closes the tab. If any unsaved changes are detected, a pop-up message will prompt the User to save or cancel the changes.

User Preferences 2 Tab

User Preferences 2 Tab

#	Component	Description
1	Studies lists: displayed columns	The columns displayed in the Exam screen's Studies list. On the left in the Hidden columns list are the available column options. On the right are the selected column options that will appear in the Studies list, listed in their order of appearance.
2	Send To Destinations	Select up to three frequently used Send To destinations. These selected and applied options are then added as buttons beneath the Send To button on the Exam screen.
3	Keyboard	Activates the on-screen virtual keyboard.
4	Reboot	Switches the System off and on.
5	Cancel	Cancels all changes made on the screen.

#	Component	Description
6	Apply	Saves and applies all changes made on the screen.
7	OK	Closes the tab. If any unsaved changes are detected, a pop-up message will prompt the User to save or cancel the changes.

Configuring the Study Screens

Depending on the specifications and/or workflows at a given imaging site, the various table fields in the Study, MWL, and so forth, can be configured and customized.

Configuring General Preferences

1. From either the Exam screen or the MWL screen, click the **Settings** button.
2. Choose **Settings** from the menu.
3. Click the **User Preferences 1** tab. All of the CR System Software data configuration fields appear.
4. Using the check-boxes, field menu configuration, and radio buttons, make all of the configuration choices suitable for your imaging environment.
5. When you are satisfied with your choices, click the **Apply** button.
6. Click **OK** to return to the previous screen. Your configuration choices will now be enabled.

Configuring the Exam and MWL, and Studies/Images Lists

1. From either the Exam screen or the MWL screen, click the **Settings** button.
2. Choose **Settings** from the menu.
3. Click the **User Preferences 2** tab. The properties and fields for Table Configuration areas appears.
4. To choose a table to configure, click on the **Table Name** dropdown menu, and highlight your choice.
5. To move a column from either field, highlight the column and click either the left or right button to move columns between the Available Columns list and the Displayed Columns and Order list.

NOTE: In order to control the order of the displayed columns, select any item in the Displayed Columns And Order field, and click the up or down button.

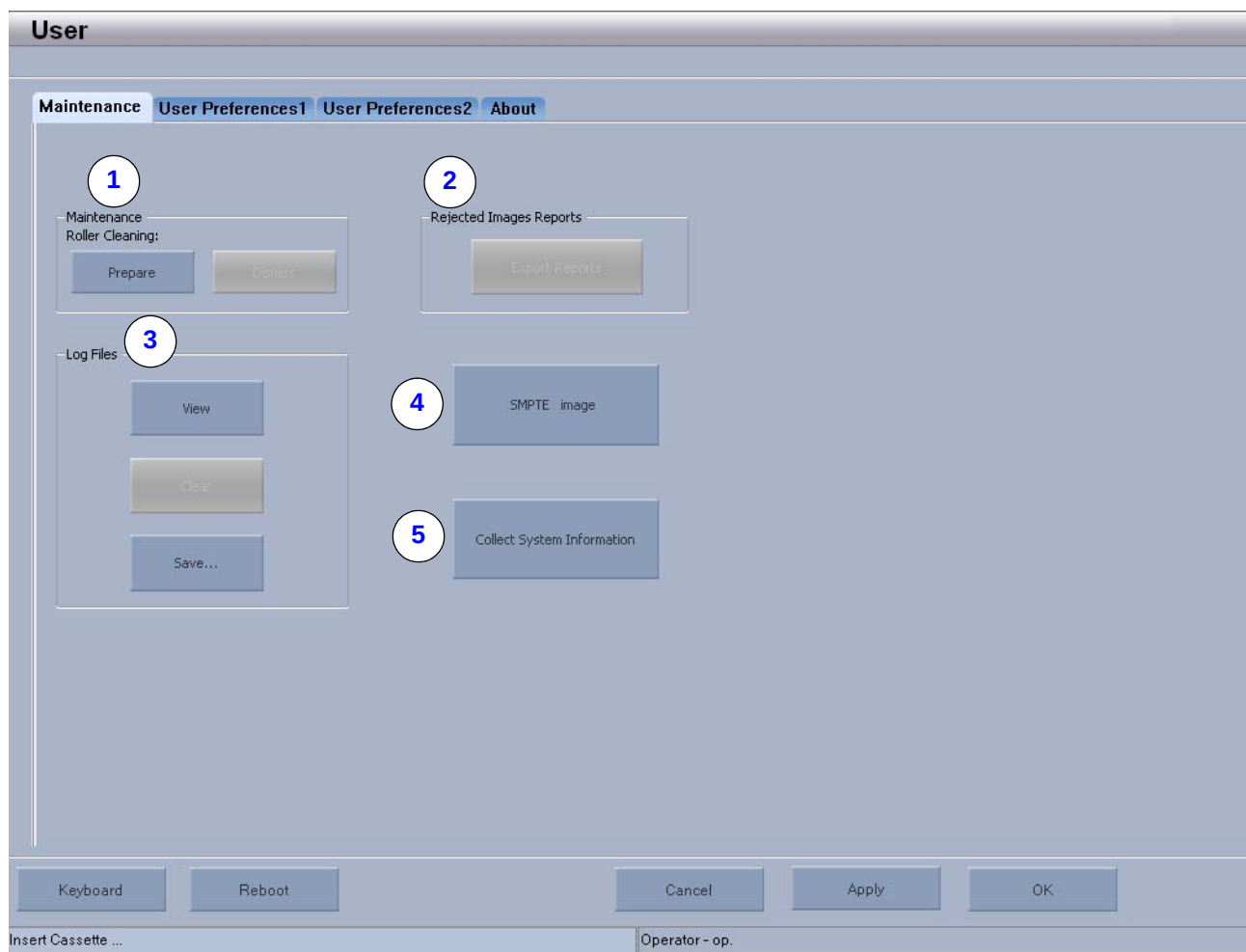
NOTE: In order to customize the names of the displayed columns, select any item in the Displayed Columns And Order field, and click the **Rename Column** button. Enter the custom name in the Defined Column Name field, and click the

Rename button.

6. When satisfied with the changes, click the **Apply** button.
7. Click **OK** to return to the previous screen. Your configuration changes will now be enabled.

Maintenance Tab

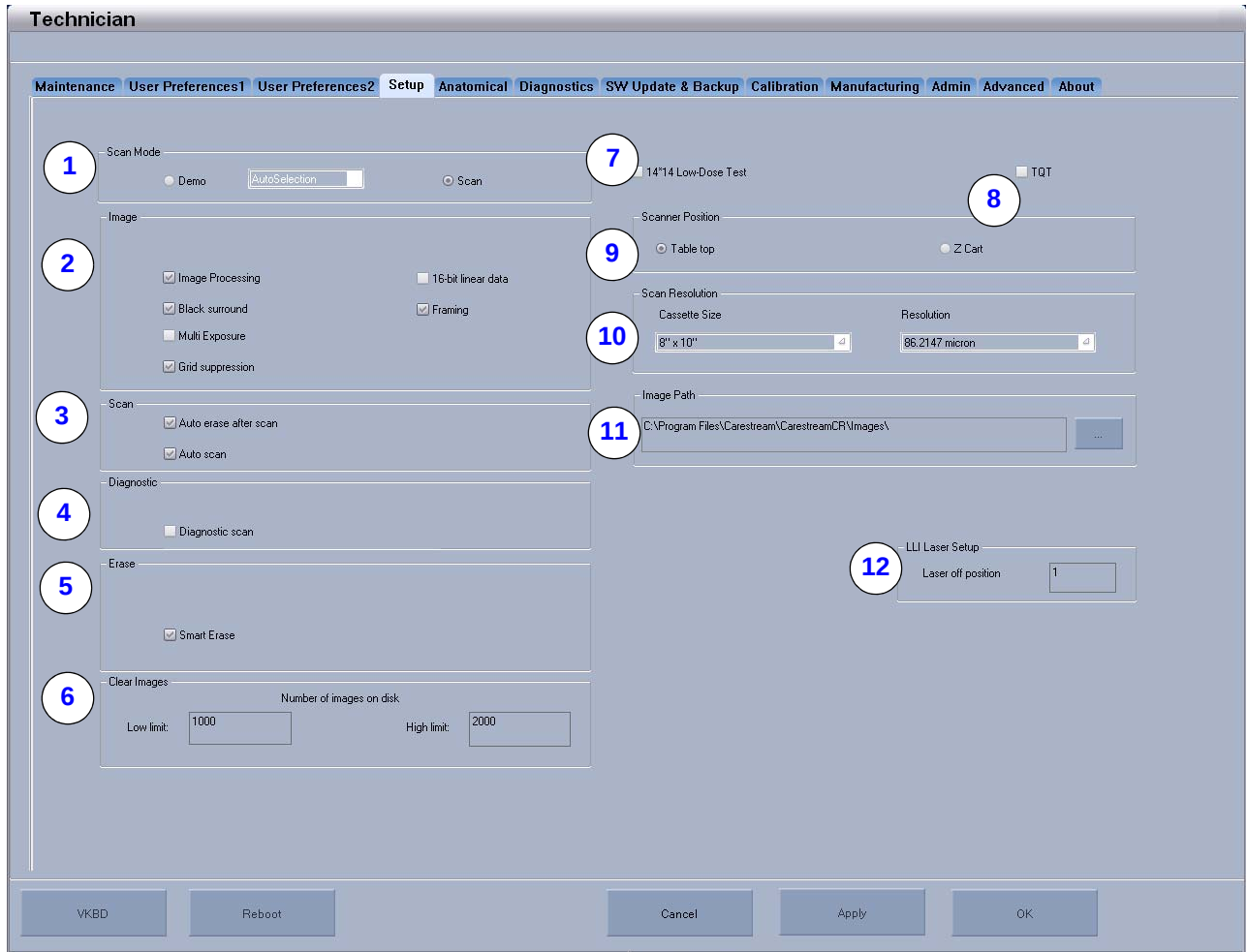
See the figure and table below for an explanation of the controls on the Maintenance tab.



Control	Control Description
1	Click Prepare to initiate the Roller cleaning procedure. See details in the Hardware Guide.
2	(Purchasable option) Click to generate a Rejected Images report, showing study data, reasons for rejection, and so forth.
3	Buttons are provided to view, clear, and save system log files, which are required to aid in System troubleshooting.
4	Click to generate a standardized test pattern.
5	Click to gather system information such as software version, system event logs, PC information, and so forth.

Setup Tab

The **Setup** tab is used to enable or disable certain applications. It can be accessed by both the key operator and the full service level operator.



Setup Tab

#	Component	Description
1	Scan Mode	Set Scan Mode to Scan for normal cassette scanning. Demo can be selected when you want to simulate a scan that displays sample images. No cassette is required in Demo mode.

#	Component	Description
2	Image options	Determines which image processing options will be integrated into the scanned image.
		1. Image processing: an optional image enhancement tool which includes six different looks. Looks are determined in the Anatomical tab. A license is required.
		2. Black surround: activates automatic detection of the collimated regions, and surrounds them with black borders. Black surround is checked by default.
		3. Multi exposure: Automatically detects non-collimated areas in a cassette containing multiple exposures, and surrounds them with a black border. Multi exposure is unchecked by default.
		Grid suppression: Suppresses grid lines imprinted on the image. The grid suppression recommended value is 103 LPI (aspect ratio 1:8). The default state is checked.
		16-bit linear data (Service only): saves the raw unprocessed images as 16 bit in C:\Program Files\Carestream\CarestreamCR\Images\Linear images .
		Framing: When checked, the image is cropped to remove the white overscan. The default state is checked.
3	Scan options	Auto erase after scan erases the cassette after each scan. The default state is checked. Auto scan initiates a scan automatically when scan prerequisites have been met. The default state is unchecked. For Auto-scan to be performed, the following should be done: 1. Study details entered. 2. Cassette loaded. 3. Body part and sub part selected.
4	Diagnostic	For diagnostic purposes only. Not for regular use.
5	Erase	Smart Erase sets the erase time according to the level of the phosphor screen exposure. The default state is checked.
6	Clear Images	High limit: the maximum number of images to be stored in the hard drive. Low limit: the number of images that will remain in the database after the delete process is initiated. The oldest images are always deleted first.
7	14 * 14 Low Dose Test	Not applicable.

#	Component	Description
8	TQT- Total Quality Test	Activates the TQT mode. The TQT module performs image quality control tests. An optional TQT license will enable the user to activate an image analyzing application (See the <i>TQT Users' Guide</i>).
9	Scanner Position	Select scanner position: tabletop (flat surface) or -Z cart (60 degrees).
10	Scan Resolution	Set the scan resolution for each cassette size. Currently, only large cassettes support more than one scan resolution.
11	Image file destination	Set the image file destination path. The default destination is C:\Program Files\Carestream\CarestreamCR\Images\ .
12	LLI Laser Setup	Not applicable.

Anatomical Tab

Introduction

The CR System is capable of handling several body part view options for each body part. For this purpose, the CR System Software assigns four rooms. A Room has a set of user-defined parameters that are applied to provide different presentations of body part images.

The Rooms are designated by default as Room1, Room2, Room3, and Room4. It is recommended that the Rooms be given user-friendly names, such as Dr. Smith's Room.

Each physician has different needs as to how a body part should be viewed.

The following body parts are provided:

Image Processing Look	Characteristics	Usage
High Contrast	System default setting	Suitable for all body parts
Wide Latitude	For images needing wide latitude	Abdomen, spine, chest
Extremity	High contrast, narrow latitude	Extremity imaging
Medium Contrast	Universal look, less contrast than high contrast.	Suitable for all body parts
Standard	Less contrast than Medium Contrast. Soft or smooth look.	Suitable for all body parts
Traditional	Contrast, latitude and sharpness remain fixed, like film. Brightness adjusted to correct for under- and over-exposure.	Suitable for all body parts

For example:

A patient's chest was exposed and its image is sent to Dr. Smith for observation. Dr. Smith prefers to view the image with high contrast than the view provided by the original scan. Then, on the next day, a patient's chest was exposed, but this time the image was sent to Dr. Dave for observation. Dr. Dave wishes to view the image with a soft or smooth look. These two different appearances of the images are available due to the Room settings.

* Room 1 for Dr. Smith, who set the view to Extremity to show high contrast

* Room 2 for Dr. Dave, who set the view to Standard for a soft or smooth look.

NOTE: The preferences set for a room are effective for all body parts.

Anatomical Tab

Technician

Maintenance User Preferences1 User Preferences2 Setup **Anatomical** SW Update & Backup Admin About

1 Room Configuration

Name	Show
Room1	Show
Room2	Hide
Room3	Hide
Room4	Show

Machine is disconnected.

Organ Configuration

2 Room: Room1

3 Organ: SKULL

Rename Organ

Name	Orientation1	Orientation2	Body Part	Position	Look
Mandible AP	No_Rotation	No_Rotation	JAW	AP	HIGH CONTRAST
Mandible Lateral	No_Rotation	No_Rotation	JAW	LATERAL	EXTREMITY
Nasal bone	No_Rotation	No_Rotation	NASAL_BONES	LATERAL	MEDIUM CONTRAST
Panoramic	No_Rotation	No_Rotation	DENTAL	AP	STANDARD
PATTERN	No_Rotation	No_Rotation	PATTERN	AP	STANDARD
Sinuses	No_Rotation	No_Rotation	SKULL	PA	MEDIUM CONTRAST
Skull Lateral	No_Rotation	No_Rotation	SKULL	LATERAL	EXTREMITY
Skull PA/Orbit	No_Rotation	No_Rotation	SKULL	PA	STANDARD

4

Add Sub Organ

6 Name: Add

5 Delete Selected Sub Organ

Reset Sub Organ To Factory Values

Keyboard: Return

Cancel Apply OK

Disconnected... Key Operator - key.

Anatomical Tab Description

#	Component	Description
1	Room Configuration	Edit room names, or select Show/Hide rooms. At least one room must be in Show mode.
2	Room list boxes	Select a room from the drop-down list.
3	Organ list boxes	Select Organ (body part). Related Sub Organs (view positions) appear in the main list.
4	Main list	Displays the Sub Organ list for the selected room and organ.
5	Delete selected sub organ	Select a Sub Organ and click the Delete selected sub organ button to delete it from the list. A Sub Organ that is assigned to a procedure in the Procedure Mapping Tool cannot be deleted.
6	Add sub organ	Enter a name and click Add to add it to the list.

Admin Tab

The Admin tab can be accessed by a key operator and a full service operator in order to manage the list of registered users of the system and their access levels. There are three user access levels: operator, key operator and full service operator. Tabs and dialog box options are displayed to users based on their registered user's access level. For example, an operator will only have access to the About, Maintenance, and User Preference tabs. The assigned user access level also determines the options available in the tabs.

Tab Name	Full Service Access Level	Operator Access Level	Key Operator Access Level
Admin	x		x
Advanced	x		
About	x	x	x
Maintenance	x	x	x
User Preferences 1	x	x	x
User Preferences 2	x	x	x
Setup	x		x
Anatomical	x		x
Diagnostics	x		
SW Update and Backup	x		x
Calibration	x		

Technician

Maintenance User Preferences1 User Preferences2 Setup Anatomical Diagnostics SW Update & Backup Calibration

Manufacturing **Admin** Advanced About

Add/Remove Users

User Name	Technician Level	Auto Login
admin	Full Service	False
12345	Full Service	False
key	Key Operator	False
op	Operator	False

User Name:

User Password:

User Level:

Auto Login: ☐

Insert/Update Remove

Add/Remove Physicians

Physician Name:

Insert Remove

Add/Remove Referring Physicians

Referring Physician Name:

Insert Remove

Keyboard Relay Cancel Apply OK

Disconnected... Full Service - 12345.

Admin Tab

#	Component	Description
1	User List	List of users registered within the system.
2	User Name	User name of a selected user or new user.
3	User Password	Password field for a selected user or new user.
4	User Level	List of permission levels: Full Service, Key Operator or Operator.
5	Insert/Update	Click in the text box to add or update user details.
6	Remove	Click to remove the selected user from the system.
7	Physician Name	Enter the physician name to associate with the study details.

To Add a New User

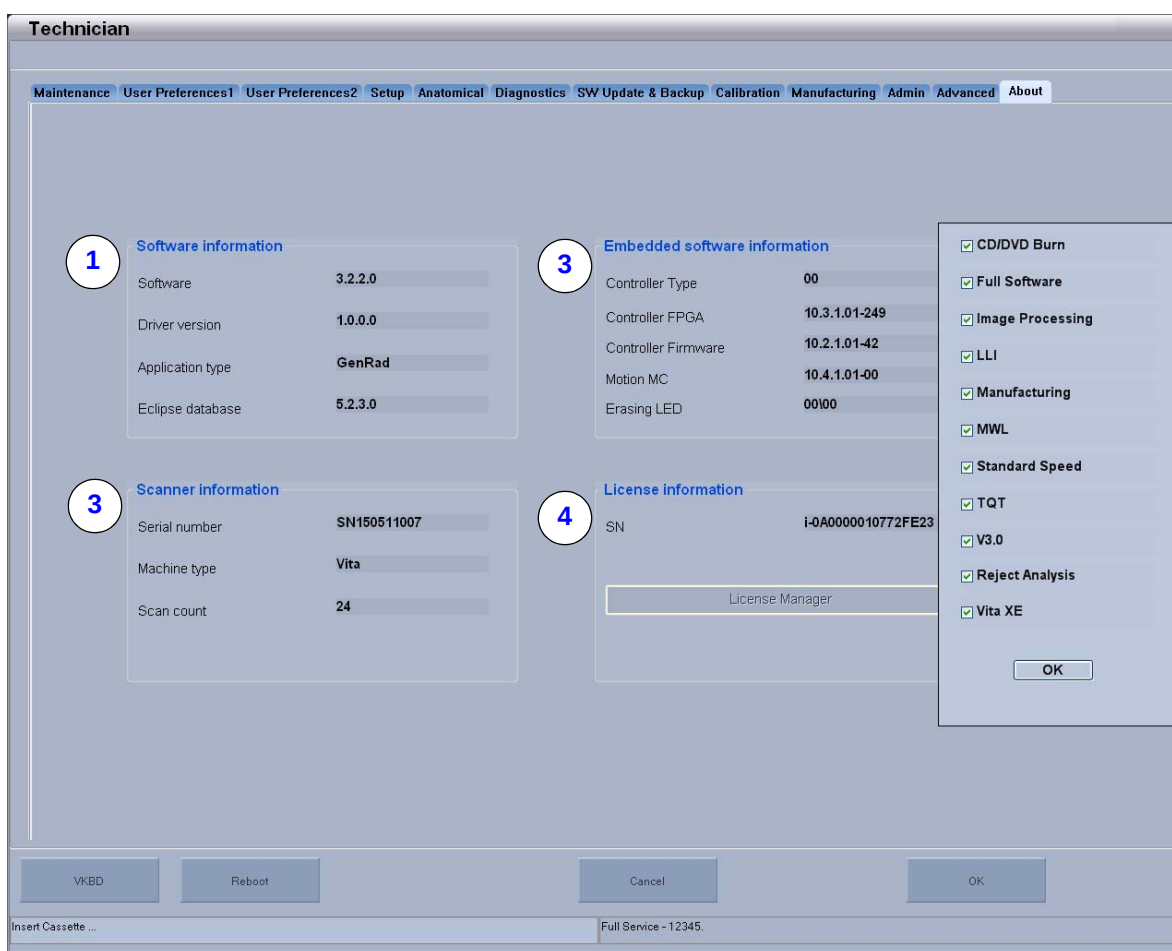
1. Enter the **User name**.

2. Enter the **Password**.
3. Select the **Level**.
4. Click **Insert/Update**.

NOTE: A key operator cannot remove himself (or the last operator) from the list. A key operator can add or remove an operator or key operator, but not a full service operator.

About Tab

The About tab displays information about the unit and the software version installed. FPGA, firmware, and software version details are updated each time the the software is updated.



About Tab

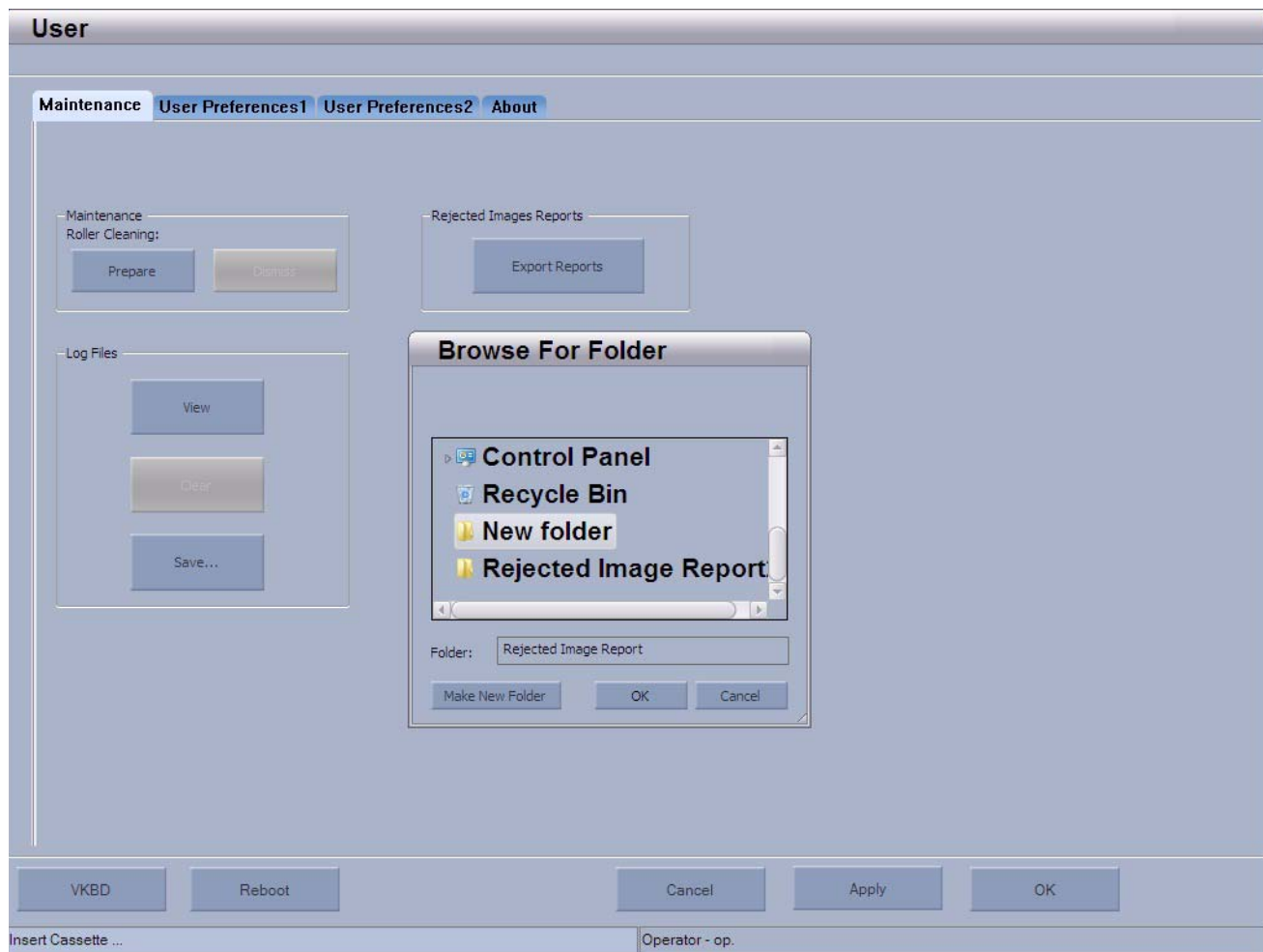
#	Component	Description
1	Software information	Software—CR System software version Driver version—system hardware driver version Application type—GENRad, light, or grayling Eclipse database—database of the image filter version
2	Scanner information	The serial number is comprised of nine digits (SN XX XX XX XXX) Machine type—name of product type Scan count—number of scans performed to date
3	Embedded software information	Controller Type—indicates the controller version to be able to identify the hardware configuration. Controller FPGA—Software burned on the controller board; responsible for the linear function of the image structure. Controller firmware—Software burned on the controller board; responsible for the error report linked to the FPGA software, and the computer connection. Motion motor control—Software burned on the controller board; responsible for the system operation timing, and various motor functions. Erasing LED—indicates the Erasing LED module hardware configuration
4	License information	There are several purchasable options available for the system. To view a list of all available system licenses, click License Manager .

Rejected Analysis Report

This feature provides a report on rejected images in a .txt format.

NOTE: A reject images license is a purchaseable option.

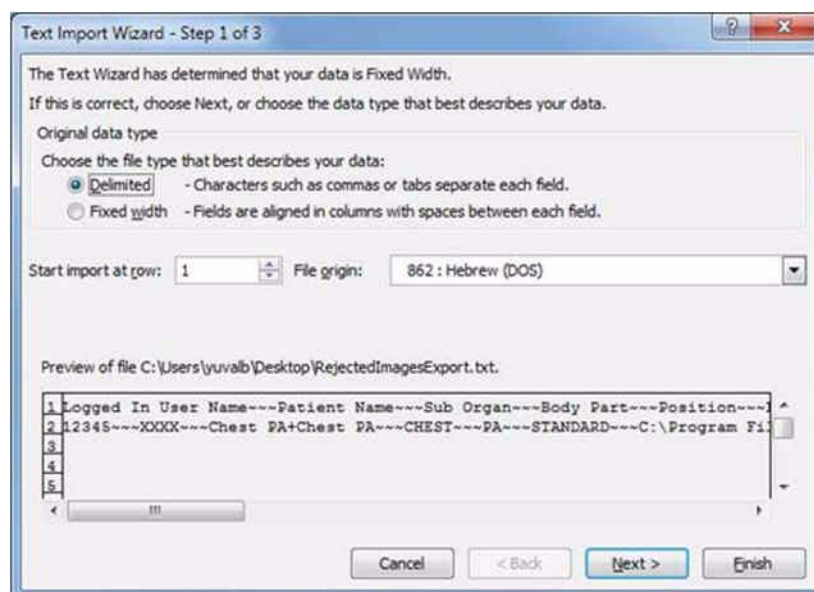
1. Click the **Settings>Maintenance** tab.
2. Click the **Rejected Images Report** button.
3. A browse window will be open to save the report. Click **OK** after choosing the saved file location.



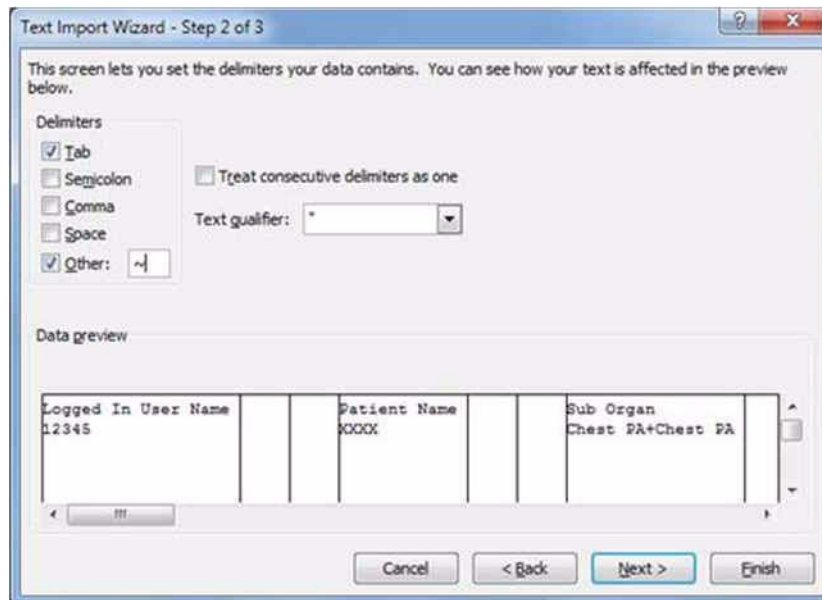
4. When the confirmation message appears, click **Yes**. In the exported file, patient names will be kept anonymous.
5. The **Rejected Image Report** is saved in a text (.txt) format.

Open the Rejected Images Report File as an EXCEL File

1. Open the MICROSOFT EXCEL spreadsheet.
2. Open the **Rejected Images Report** file from the saved location.
3. Select **Text file** as the type of files and choose the **RejectedImagesExport** file.
4. In the dialog box displayed, select the **Delimited** radio button. It will format the file depending on the delimiter used (~).



5. In the next dialog box displayed, add ~ as the **Other** delimiter option. View the changes in the **Data preview** window.

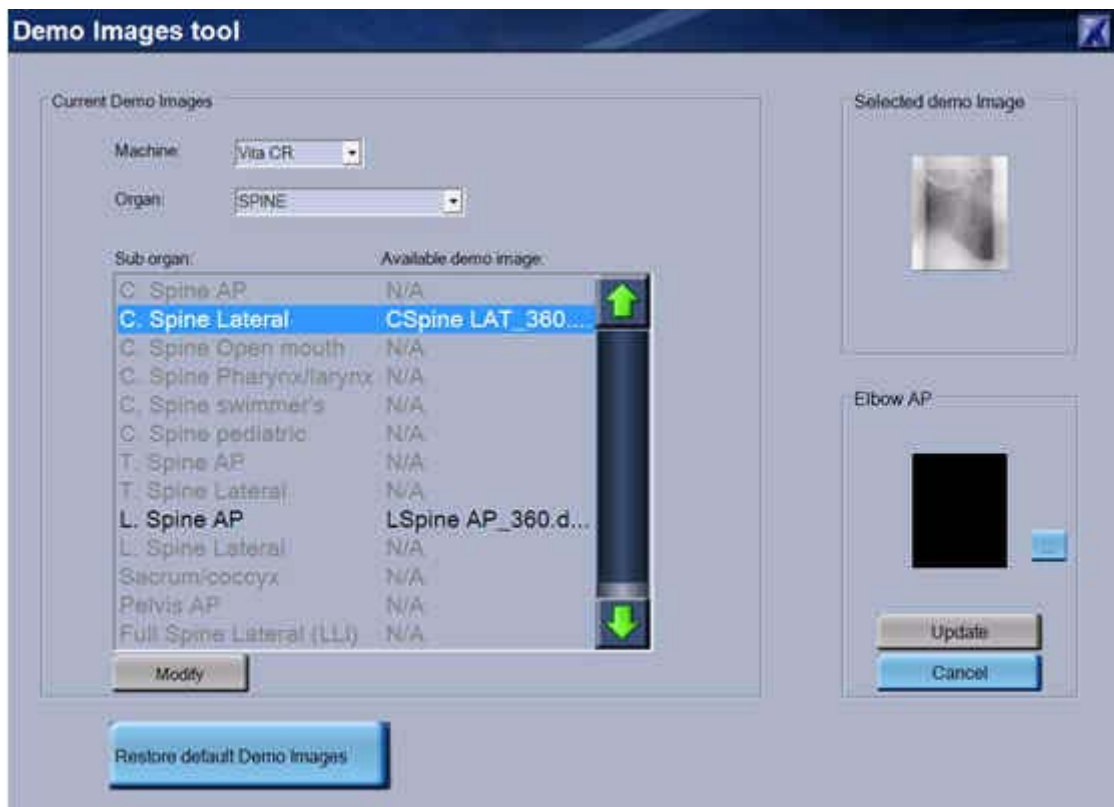


6. Click **Finish** to view the results of these settings.

Demo Images Tool

The Demo Image tool allows the user to replace the current demo image to any image.

1. Navigate to the folder: **C:\Program Files\CarestreamCR\GenRad\Bin.**
2. Click on the **DemoImageTool.exe** file.
3. The **Demo Images tool** window displays.



4. Select the Machine Type, Organ, and the Demo image.
5. Browse and select the new image by clicking the Browse button.



6. Click **Update** to save the new image on the selected Demo image.

NOTE: You can restore the default Demo image by clicking on the **Restore Default Demo Images** button.

7 Study/Archive CD/DVD

With this option, you can do the following:

- Write images to a local CD or DVD disc writer.
- Search for discs and their contents.
- Retrieve and view images on a CD.

About Writing Images to Disc

When you write images to a local CD or DVD disc writer, each media is assigned a unique identification number. For each disc, you will do the following:

1. Build a compilation of images at the Disc Publishing Window.
2. Burn information to the media.

Protected Health Information (PHI) can be configured not be shown to protect the patient's right to privacy.

You also have the option to retrieve the discs from a database where identifying information for each compilation is stored.

Writing Images to Disc

1. Insert a blank CD or DVD into the drive.
2. Choose the study to burn from the main exam screen.
3. Click the **Send To** button, and choose **Burn** from the dropdown menu.

NOTE: To burn images directly from the scan screen, click on the CD/DVD icon.

Working with the Disc Publishing Window

Use the Disc Publishing window to build compilations of images and to start CD/DVD burn operations. The following table describes the controls contained in the Disc Publishing window.

Control Name	Icon	Description
New Compilation		Restart the wizard and clear out the Disc Publishing window.
Start Burn		Initiate the disc writing.
Delete		Delete the selected object (file or folder). NOTE: The default folders DICOM Objects and Non-DICOM Objects cannot be deleted. If a default folder is selected when you click Delete , all files inside the default folder are deleted.
Eject		Eject the disc.
Change Disc Writer		Change from the disc writer drive that you specified in the wizard.
Setup		Identify: • Media Type: choose to burn on CD or DVD • Span Multiple Discs • Copy Viewer to Discs
Exit		Close the Disc Publishing window.

Building an Image Compilation Directly from the Viewer

1. Open files from the thumbnails pane. See [“Viewing and Adjusting Images” on page 5-8](#).
2. Drag files into the Disc Publishing Window to build the compilation. See [“Working with the Disc Publishing Window” on page 7-2](#).
 - You can build a compilation with images from the Thumbnails Pane or the Viewing Pane.

NOTE: Any image adjustments that you have applied in the Viewer Application are not saved into the compilation.

- The files are automatically organized into the DICOM and Non-DICOM folders.
 - The size of the compilation is shown by the blue rectangles at the bottom of the application as you drag in the files. If you drag in more files than can fit on the disc, the compilation progress bar and the disc hierarchy only show one disc, but you are warned that you will need more discs when you click **Start Burn**.
3. Click **Start Burn**. If the compilation is larger than the disc, a message informs you to insert another disc. When the write is completed, a message appears with the identification number. Shelf storage users should record the identification number for easy retrieval.

Retrieving Disc Information from the Local Database

Click **CD/DVD** on the Main Toolbar, then **Search Database**. The following screen appears.

Enter information to search for a disc, a study, or a set of images.

- Click **Date** to select a date range.
- Click **VKBD** to display the keyboard where you can enter text in the other search fields.
- Click **Search** to start the search.
- Click **Clear** to start over with new search criteria.

**Retrieving Images to View
from Disc**

You can retrieve and view images from an IHE-compatible CD. Insert the CD into the drive. If the CD has an auto-run program, the Viewer Application opens.

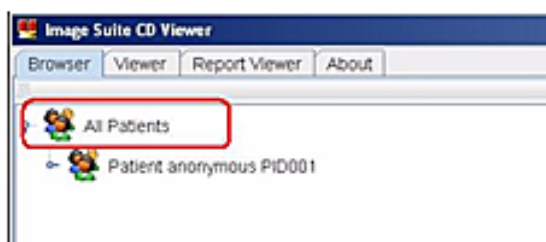
NOTE: If the Viewer Application does not open, launch WINDOWS Explorer. Browse to display the CD/DVD drive. Right-click the drive and select **Autoplay**.

8 Working with the Written CD/DVD

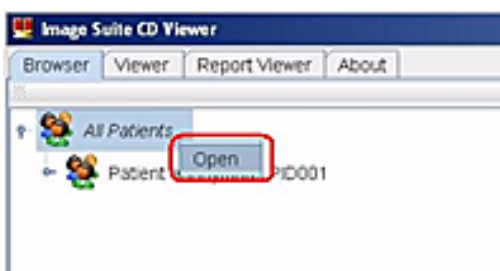
This section describes reviewing digital images on a CD or DVD using the included Image Suite CD Viewer application on an external computer.

Loading Images Into the CD Viewer

1. Insert the CD/DVD into the CD/DVD drive of your computer; the following screen appears.



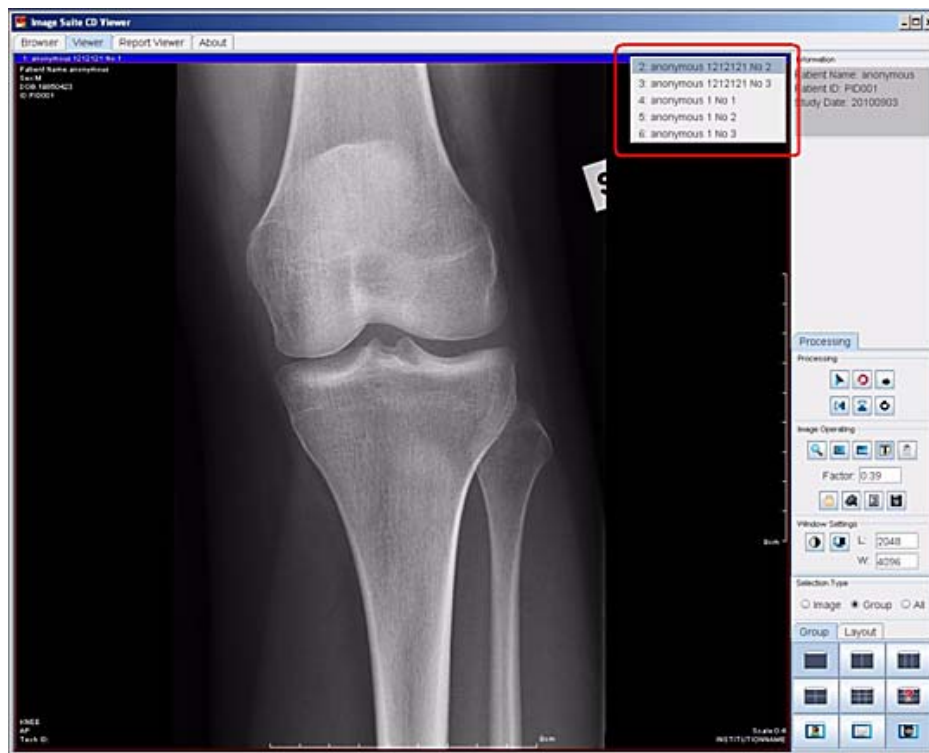
2. Left click on the **All Patients** link to highlight it.
3. Right click on the link and select **Open** to load all Study images.



Viewing Images in the CD Viewer

NOTE: The images will initially display in a 1 x 1 layout.

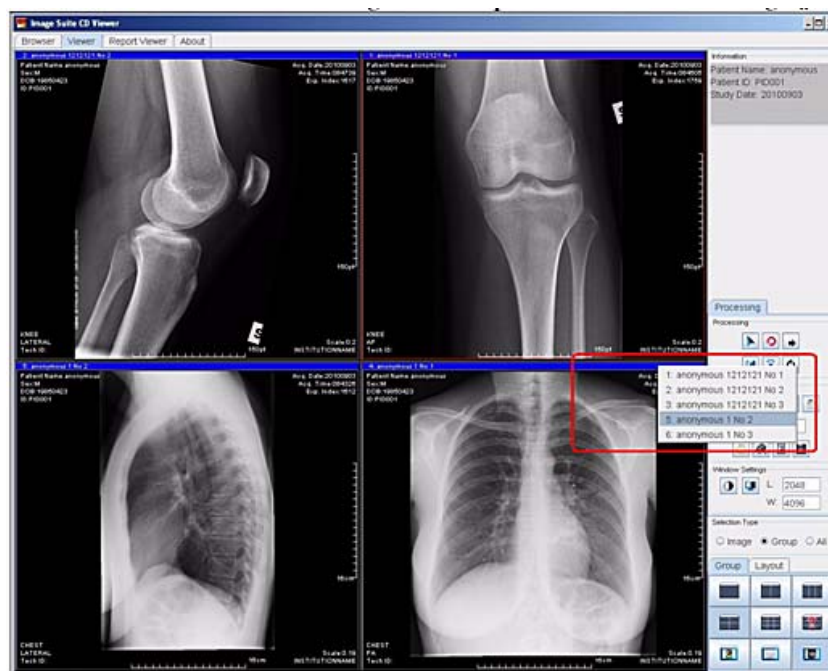
1. Select the blue bar above the image to select and review other images.



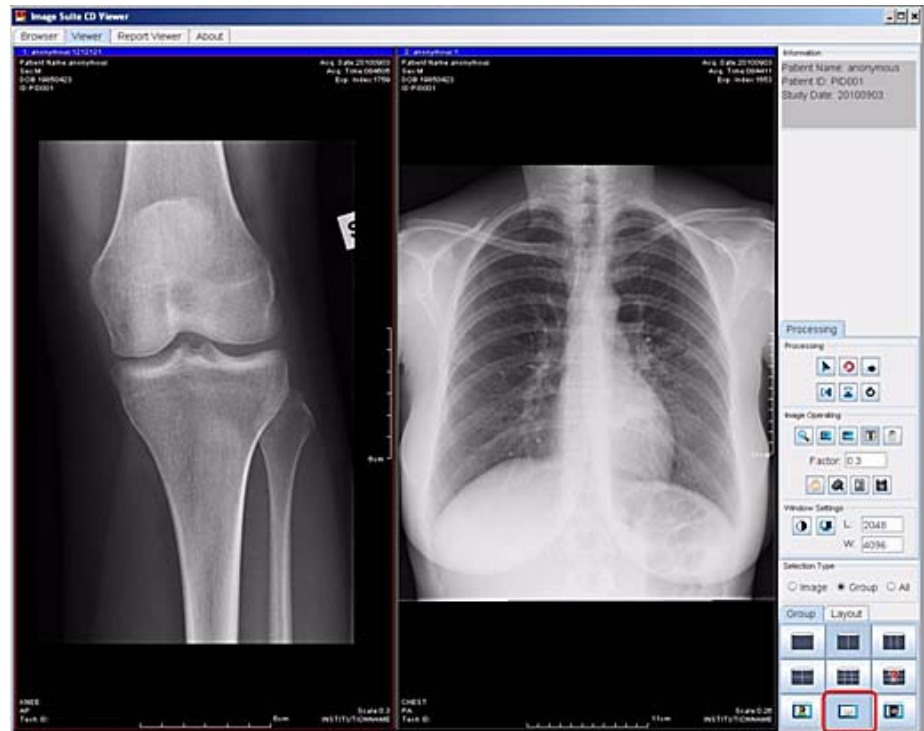
2. You can select a **Group** layout to display more than one image at a time.



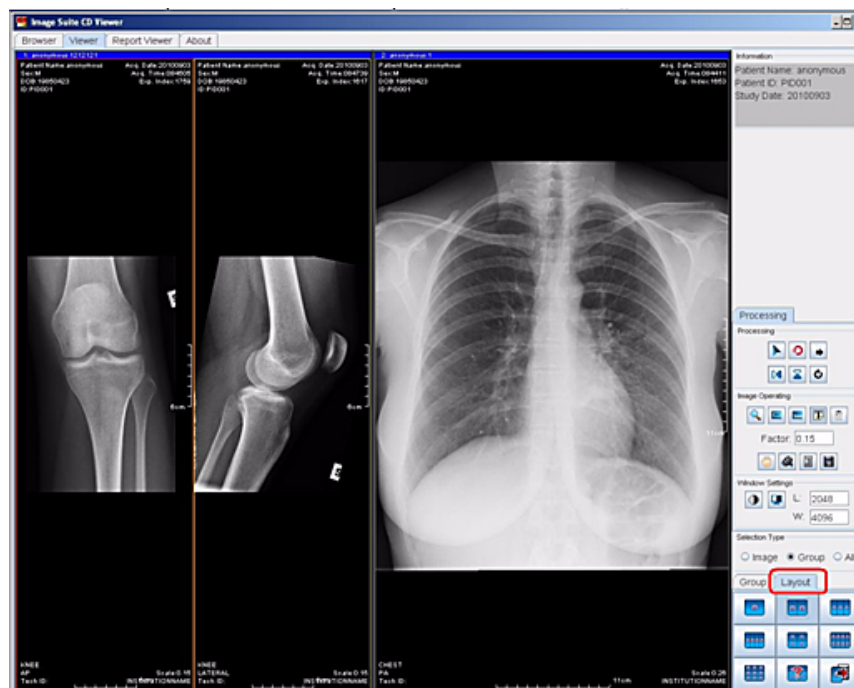
3. Select the blue bar above the image to switch positions with another image.



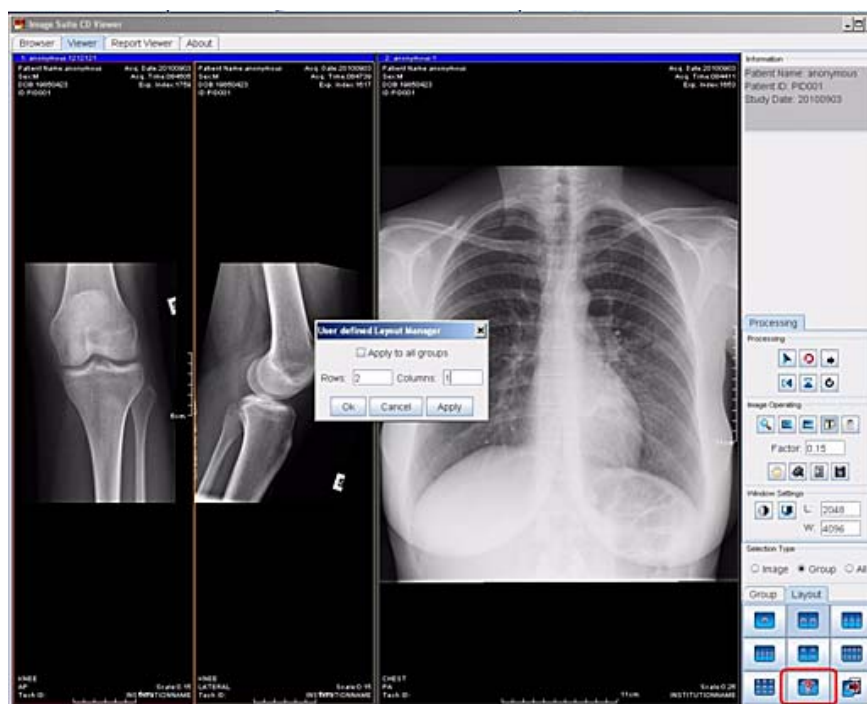
4. Select **Split By Study** and **2 x 1 Group Layout** to separate the studies by column. Use the **Pg Up** and **Pg Down** keys after the **Split By Patient** or **Study** to review other images.



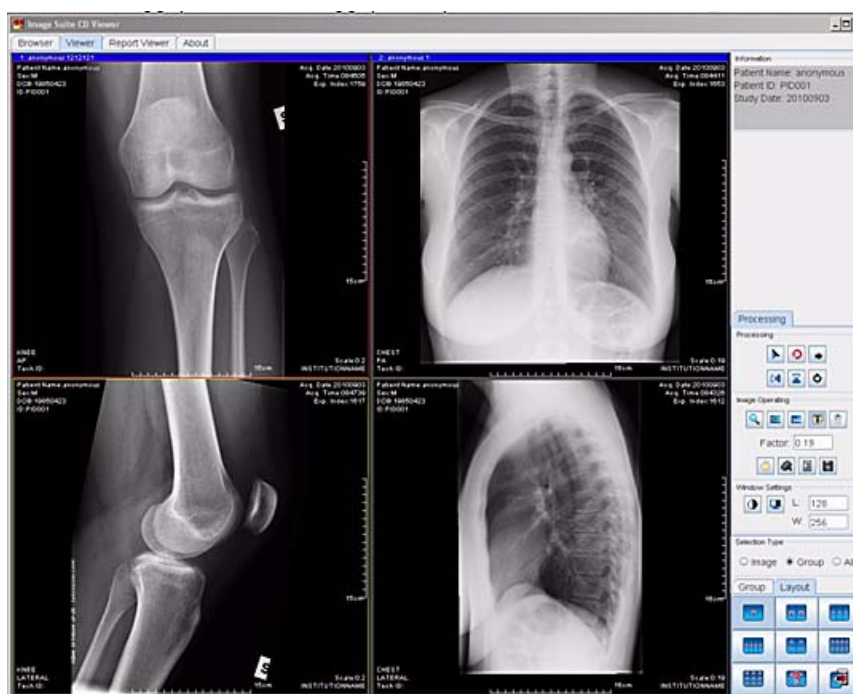
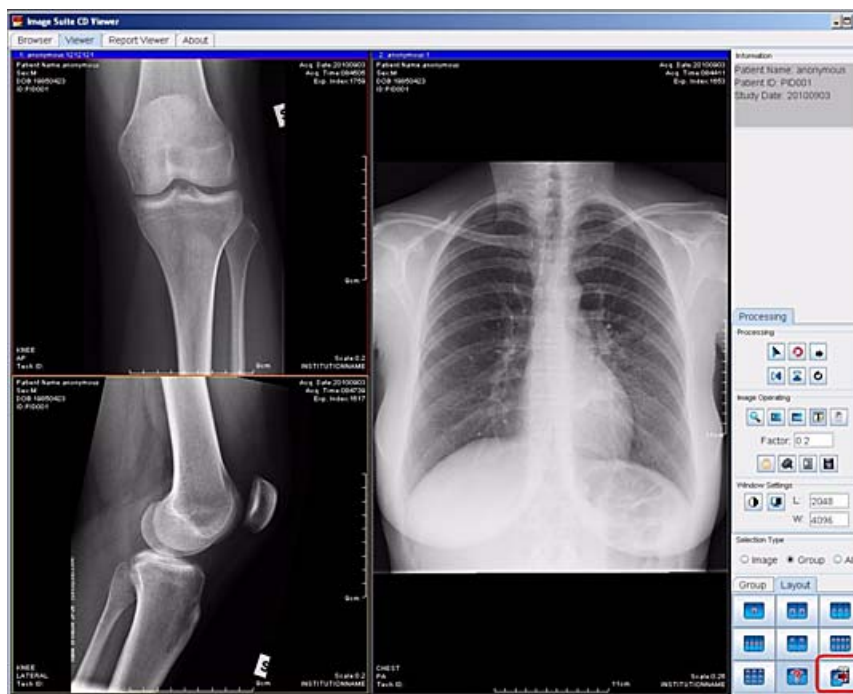
5. Select the **Layout** tab to create a layout within a column.



6. Select the **Layout Manager** to customize the layout.



7. Select the **Apply to All** button to apply the layout to the other columns.



Viewer Tools

You can use the viewing tools to examine the image in the Viewer.
The viewing tools are described in the table below:

Task	Icon	Description
Selection		Click to select the image. The selected image will have a red box around it.
Reset		Click to restore images to the original status.
Invert		Make a negative picture of the image.
Horizontal Flip		Generate a horizontal mirror picture of the image.
Vertical Flip		Generate a vertical mirror picture of the image.
Rotate		Rotate the image 90 °.
Zoom		The cursor changes to a magnifying glass. Hold down the left button of mouse and drag up to shrink the image, down to expand the image. The aspect ratio is kept. Zoom range: 0.02 to 5.0.
Fit Window		Fit image to window.
Fit Original		Display image at a 1:1 ratio.

Task	Icon	Description
Show/Hide Annotation		Click to show or hide annotations and overlays.
Report Viewer		Load report into the Report Viewer tab for the selected Study.
Magnification Factor	Factor: 0.2	Enter the desired magnification factor for the selected images.
Pan		The cursor changes to a hand shape, used for moving the image within the frame.
Cine		Used to play a slideshow of all selected images.
Dump DICOM Header		Click to show DICOM header.
Save Selected Image As		Click to save current image to files in JPG format.
Set W/L		Input W/L values in the right side box; then select the Enter key.
Preset		Click to display a drop-down menu, including preset Max. and Min. values.

9 DICOM Settings

The DICOM Settings screens enable set up of all DICOM related parameters for connecting the software to PACS, HIS/RIS and DICOM printers. The DICOM Settings screens are accessed from **Settings > DICOM Settings**, and clicking the **DICOM Settings** option.

NOTE: The DICOM Settings screens are accessed only by the Key Operator or the Full Service Operator.



Key Operator Settings Options

NOTE: For the changes you make to take effect to any of the two screens:

1. Before making any change, click **Stop Service**.
2. After completing the changes, click **Start Service** and log out from the *CR Systems Software*.

NOTE: For the required parameters, please consult your clinic/hospital System Administrator.

Configuring DICOM Settings for Modality Work List (MWL)

When working with the HIS/RIS or PACS services in an imaging facility, you must configure the DICOM Settings tab to enable the use of the DICOM Services.

To access DICOM Settings, select **Settings > DICOM Settings**. See the table below for configuration information on each field.

DICOM Settings

Settings Destinations

MWL

Modality Work List

Host name / IP: localhost

Port: 6104

Called AE title

Calling AE title

Echo/Test

Modality Work Query

Query since: Today (00:00-23:59)

Modality: CR

Auto Refresh

Query all patient ID: *

Query all accession number: *

Query all patient name: *

QueryTimeout: 15 Sec.

Network query time: 1 Min.

Query by AE title

Station name

DICOM send source

"Send Files" interval: 1 Sec. Retries: 2

Source AE title: CSH

"Send Files" timeout:

"Failed Files" interval: 60 Sec. 300 Sec.

DICOM char set: Default

Institution name

Manufacturer: Carestream Health, Inc.

Manufacturer model name: Vita CR system

Images-Storage query interval: 60 Sec.

Station Name

Use Same Series UID for all study images: ☒

Cancel Save

Keyboard Stop Service Delete Waiting Jobs Close

Settings Tab

#	Component	Description
1	Modality Work List	Enter parameters for HIS/RIS. Note that some parameters might not be mandatory, depending on the HIS/RIS definitions.
2	Modality Work Query	Enter parameters for the query from the HIS/RIS.

#	Component	Description
3	DICOM send source	• “Send Files” interval - The interval between attempts to send accepted images. • Retries - The number of times the system will try to send the images. • Source AE title - The title of the local station sending the images to PAC. • “Failed files” interval - The time interval between attempts to send unsent images. • “Send Files” time-out - The time-out to send an image to PACS. NOTE: After the maximum number of attempts have been made to send an image, the image is sent to the “failed files” folder. The image status is changed from progress to failed status in the Images Storage screen. The system will then attempt to send the next accepted image.
4	DICOM char set	Allows you to choose character sets within the software DICOM header. For example ISO_IR 100 is used for Latin languages. For information about specific character sets support, See the DICOM Conformance Statement.
5	Institution Name	Enter the site name to appear in the image header and/or printed on the image.
6	Manufacturer	Enter the name of the manufacturer to appear on the image header and/or printed on the image. This value should be Carestream Health, Inc.
7	Manufacturer model name	Enter the model name of the equipment to appear on the image header and/or printed on the image. This value should be “Vita CR.”
8	Image Storage query interval	Enter the time interval, in seconds, that the system will query the internal database to upload Accepted images.
9	Station Name	Name of the station/site within the institution where the system is set up at.
10	Use Same Service UID for all study images	When checked, all images in the scan screen are related to the same series of images. When unchecked, images from different series will be shown.

#	Component	Description
11	Start/Stop Service button	The Stop Services button is used to stop the DICOMSendService. Changes to the DICOM devices cannot be saved until the service is stopped. After Stop Service is clicked and the service stops, the button changes to Start Service. Click Save, to save changes to DICOM devices. Click Start Service to start DICOMSendService again.
12	Delete Waiting Jobs	The Delete Waiting Jobs button deletes images that were not successfully sent to the PACS as a result of connectivity problems. The images will not be deleted from the database and must be sent again at a later date.
13	Echo/Test	Click to verify that Modality Work List (MWL) is visible on the network.

DICOM and PACS Workstation Destinations

This tab is used to list PACS stations and DICOM workstation destinations.

To access, select **Settings>DICOM Settings>Destinations**.

See the table below for configuration information in each field.

DICOM Destinations and Printer Tab Fields

#	Component	Description
1	DICOM Store Destination	List of PACS stations. IP, port, and AE title are obtainable from the network administrator. Select store for PACS.
2	Add, Modify, and Delete buttons	Add, modify, or delete a station or printer in the list.

#	Component	Description
3	Storage Commitment	Enters information for DICOM destination when store is selected.
4	Add/Update	Click to add or update any information entered into the Storage Commitment field.
5	Keyboard	Click to enable an external keyboard.
6	Start/Stop Service	Stop and then restart DICOM service to apply changes that have been made.
7	Delete Waiting Jobs	Click to delete waiting jobs
8	Close	Close the DICOM Settings screen
9	Echo/Test	Verify the network connection to PACS, Storage Commitment, or DICOM workstation destinations.

10 Troubleshooting

NOTE: Messages appear either as message boxes, or as a status.

Hardware and Software Error Messages

General Hardware Error Messages

Error Message Text	Recommended Action
Scanning process was stopped.	Acknowledge the error. If it repeats, call service.
Screen loading process was stopped. Check current screen inside the cassette or load a different cassette with screen. If problem continues, call Service.	Acknowledge the error. If it repeats, call service.
Unloading Screen process was stopped	Acknowledge the error. If it repeats, call service.
Cassette release failure. Manually remove the cassette	1. Eject the cassette manually. 2. Check the cassette for possible obstacles. 3. Perform a scan with another cassette. 4. If the error repeats, call service.
Homing process was stopped	Acknowledge the error. If it repeats, call service.
Power up failure	Acknowledge the error. If it repeats, call service.
System's rollers cleaning has failed	Acknowledge the error. If it repeats, call service.
Scanner reset failed	Acknowledge the error. If it repeats, call service.
Scanner internal temperature out of range	Check the room temperature according to Site Specifications. Turn OFF the scanner and wait a few minutes.
Scanner cover is not in place	Check that the system cover is in place.
Scanner cannot operate. Main Controller board failure.	Call service.
Cassette was ejected due to two minute time-out. You may insert cassette again to perform a scan.	Insert the cassette again to perform a scan.
Loading screen cycle was stopped.	Acknowledge the error. If it repeats, call service.

Error Message Text	Recommended Action
The machine is disconnected. Changes cannot be saved, except the change to the scan mode.	1. Check USB cable connections. 2. Check power cord connections. 3. Restart the scanner. If error repeats call service.
The scanner is disconnected	1. Check the USB cable connections. 2. Check the power cord connections. 3. Restart the scanner. If error repeats call service.
CR Reader is ready for rollers cleaning. Please insert cleaning tray and then insert cleaning Plate.	The technician/user needs to execute the rollers cleaning process.
Pull out the cleaning Plate and then release the cleaning tray.	The technician/user needs to execute the rollers cleaning process.
A restart is needed for all changes to take effect	Click OK , then exit and restart the CR System Software.
Erasing process was stopped. Clicking Ok will eject the cassette. Note: The screen will not be erased. Manually erase the cassette after error message is received.	Acknowledge the error. Manually erase the cassette. If error persists, call service.
Scanner internal temperature is out of range.	Check room temperature according to the site specifications. Turn off the scanner. After adjusting the room temperature, wait a few minutes before turning on the scanner.

General Software Related Error Messages

Error Message Text	Recommended Action
<error code#> occurred while system was in standby mode	Acknowledge the error. If it repeats, call service.
<error code#> occurred after cassette was loaded	Acknowledge the error. If it repeats, call service.
Another instance of CR Systems Software already exists!	1. Wait a few seconds to see if the CR Systems Software runs. 2. Try to open the CR Systems Software again. 3. Restart the PC.
Failed to read the machine's settings. The application can't proceed. Please contact service.	Restart the scanner. If the error repeats, call service.
Failed to store image information into the database	1. Check the disk space. 2. Re-launch CR Systems Software; check if Image Storage reprocessed images have unread status. 3. If error repeats call service.
The following image(s) should be Accepted/Rejected first:	Accept or reject pending images before continuing.
Warning: Not enough space on disk. Please clear some disk space.	1. Check the disk space. 2. Free at least 1 GB of disk space.
The cassette does not match the selected sub-organ. Please either replace the cassette or re-select sub-organ.	Either replace the cassette or re-select sub-organ.
Can't choose a sub-organ during scanning. Operation is cancelled.	No thumbnail is added.
Press Cassette Size button and select cassette.	Barcode failure or unrecognized Cassette barcode.
No available demo image for the selected sub-organ.	Not all sub-organs have demo images.
This User does not have the required permissions to access this utility.	User permission is denied. If necessary, reconfigure User permissions.
Procedure Mapping Tool application is already running.	This is an informative message.
Please fill a procedure name	Enter the Procedure Name inside the tab frame.

Error Message Text	Recommended Action
A procedure with this name already exists	The procedure name is duplicated.
Please select an item	This is an informative message.

DICOM Related Error Messages

Error Message Text	Recommended Action
Failed to store the DICOM send information for this image.	1. Check the RIS network settings. 2. Repeat the RIS query.
Please note: Modality query has failed. Information retrieved from the last successful query.	1. Check the RIS network settings. 2. Check the Modality Worklist settings. 3. Repeat the RIS query.
Please note; Modality Query has failed.	No access to RIS\HIS. Cannot present study list.
Note: Host name and Port number are invalid. MWL mode will be disabled until those values configured via the DicomSetting tool.	DICOM Settings needs to be reconfigured.

Long-Length Imaging Related Messages

Error Message Text	Recommended Action
Can't choose BOTTOM before TOP was scanned or scan TOP twice. Operation is cancelled.	Insert LLI 1—top before LLI 2—bottom or insert LLI 2—bottom after scanning LLI 1—top.
The cassette is not an LLI cassette. Please either replace the cassette or re-select sub-organ.	Either replace the cassette or re-select sub-organ.
The cassette Barcode ID does not match the top side. Operation is cancelled.	Check that the Barcode ID label on the LLI 1 cassette is readable.
Can't choose a sub-organ during LLI procedure. Operation is cancelled.	To choose a different sub-organ after LLI scan, go to the study list and choose the Study again without LLI procedure.
Can't choose a sub-organ which is not for LLI during an LLI study. Operation is cancelled.	If working within an LLI procedure, the user can't choose a sub-organ that is not part of LLI procedure.
Can't choose LLI sub-organ after regular sub-organ was chosen. Operation is cancelled.	To perform an LLI sub-organ, go to the study list, reselect the study, and perform only an LLI sub-organ.

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2011-10-03	9G8916		9G8916_UG_POC_QC_SW_v3.2_UserGuide_EN.book	New Document, updated for V 3.2
2012-02-06	9G8916	Cover	9G8916_2012-02-06.book	Revised cover page
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Carestream Health, Inc.
Rochester, New York 14608

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