GENESiS®
Digital Imaging, Inc.

Omni-QC®

Installation & User Manual

Omni-QC®
Volume 2.5

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Chapter One

Introduction to Omni-QC©

Omni-QC© is a DICOM acquisition software for Kodak/Orex CR Reader. Omni-QC© is DICOM compatible including DICOM Send (SCU), DICOM Print for easy networking with third party PACS or modalities.

Features

Local database
Display and convert DICOM versus non-DICOM images (JPEG, TIFF and BMP)
DICOM Send
DICOM Print DIR
Supports one or two (Worklist, View) up to 2K
Supports twain drives
Image processing and editing capabilities
Image stitching
Customize DICOM information overlay.
Logo of hospital can be displayed like a banner.

Hardware Requirements

1) CPU: Pentium IV, 1 GHz or higher.
2) Memory: 256M or higher.
3) HDD: 40G HDD or higher.
4) Ethernet network card: 10/100Mb NIC.
5) OS: Window NT/2000 Pro/XP Pro.

Install Omni-QC

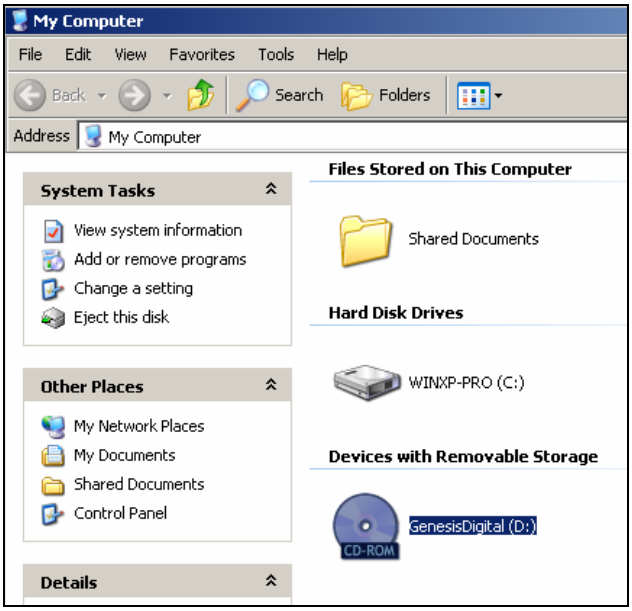
- **Note: Omni-QC is a compliment program to Kodak/Orex Interface software. Please refer to your Kodak/Orex User Manual for proper installation procedure and operation of the interface software. The Kodak/Orex drivers must be installed prior to Omni-QC installation.**

For Installation from a web download skip to step # 4

1. Insert the OMNI-QC Viewer Installation CD.

2. To begin installation, open **My Computer**.

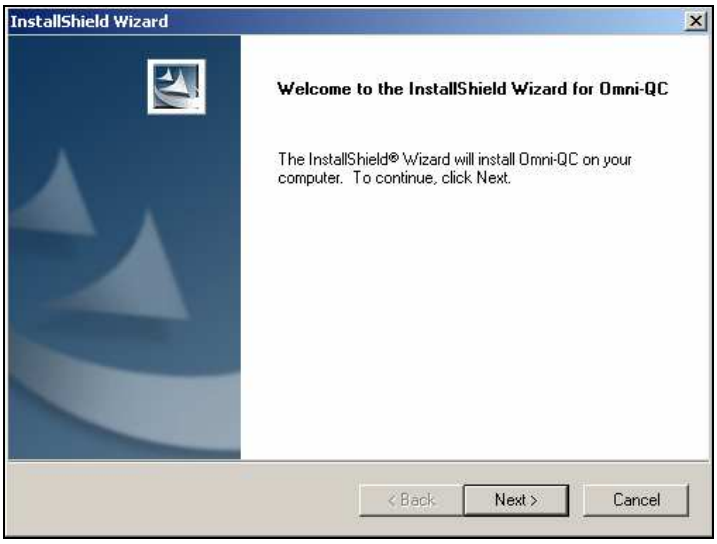
3. Click on the CD drive labeled **GenesisDigital**.



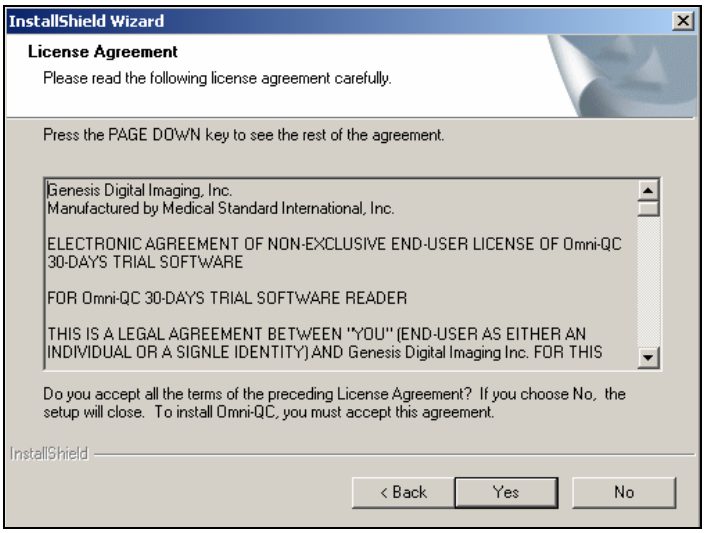
4. Click on the **OMNI-QC** folder.

5. Click on the Setup icon to initiate the **InstallShield** Setup Launcher.

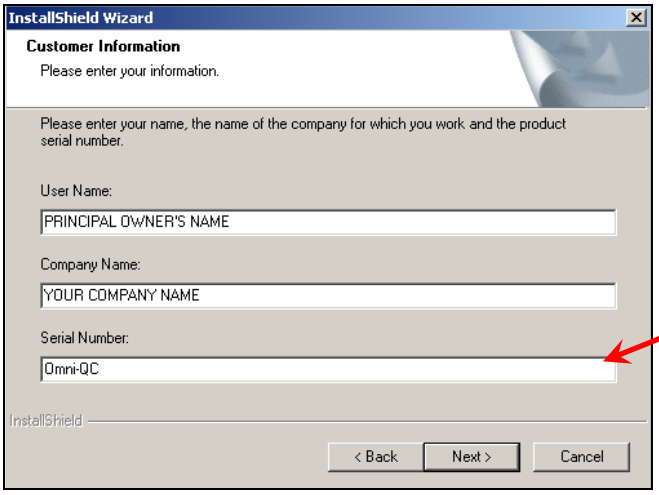
6. Click **Next**.



7. Click **Yes** if you accept the terms of the license agreement.

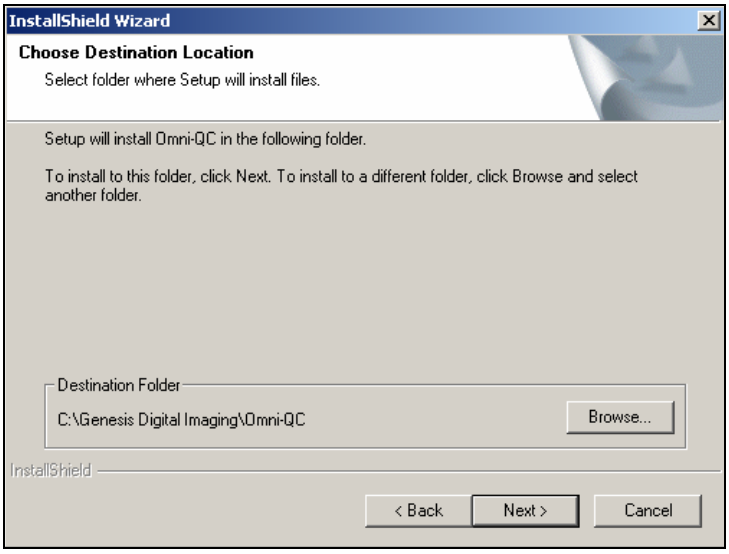


8. Enter the **principal owner's name** and the **name of your company** in the indicated areas. The serial number is "**Omni-QC**"

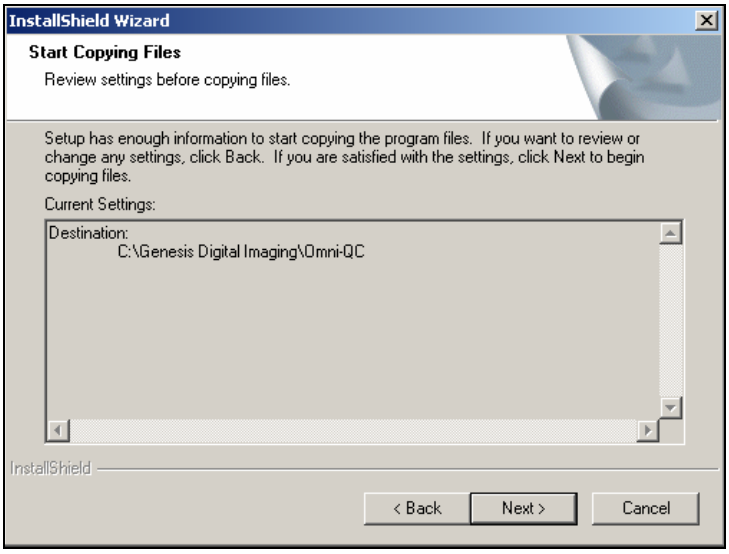


Omni-OC

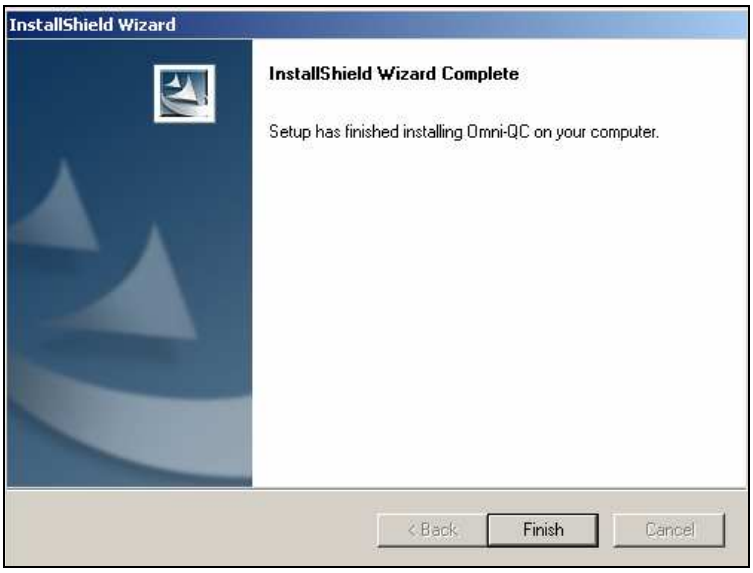
9. Click **Next** if the default folder destination shown is acceptable, otherwise click **Browse** to change the destination.



10. Click **Next**.



11. Click **Finish**. This will close the installation program.

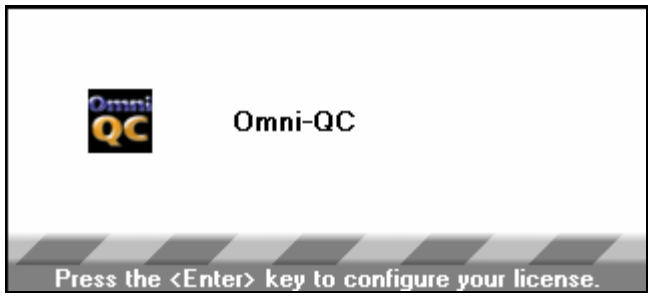


HOW TO CONFIGURE THE LICENSE

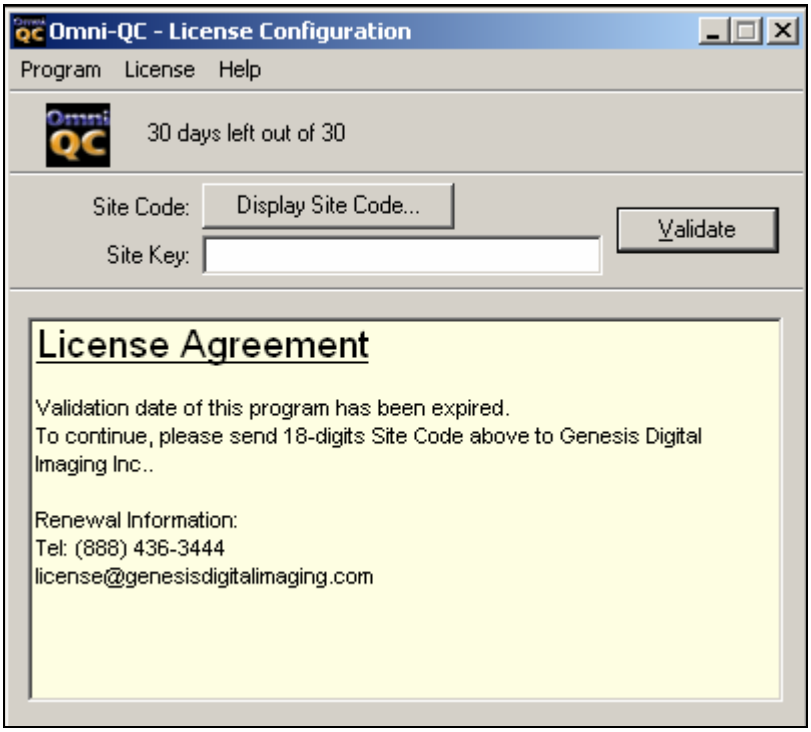
1. Click on the **OMNI-QC** icon on the desktop to open the program.

2. When prompted by the dialogue box:

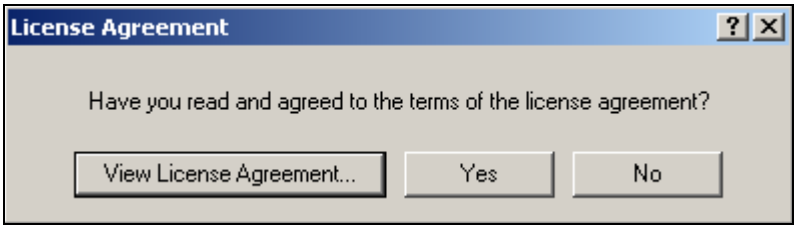
A. For 30 day Trial **DO NOT** press **Enter** and proceed to Step 2 on Page 9
B. To license the software press **Enter** and follow the instructions.



3. Click the **Display Site Code** button.



4. Click on the **Yes** button in order to continue, or choose to **View License Agreement** if desired.



5. Locate the **Site Code** (blurred out in this example). Give Genesis the **Site Code**, and they will give you the **Site Key**.

(*Note: Each Site Code is unique. You must use the Site Code displayed on your own machine.)

6. Once you have the **Site Key**, enter it in the field marked **Site Key**.

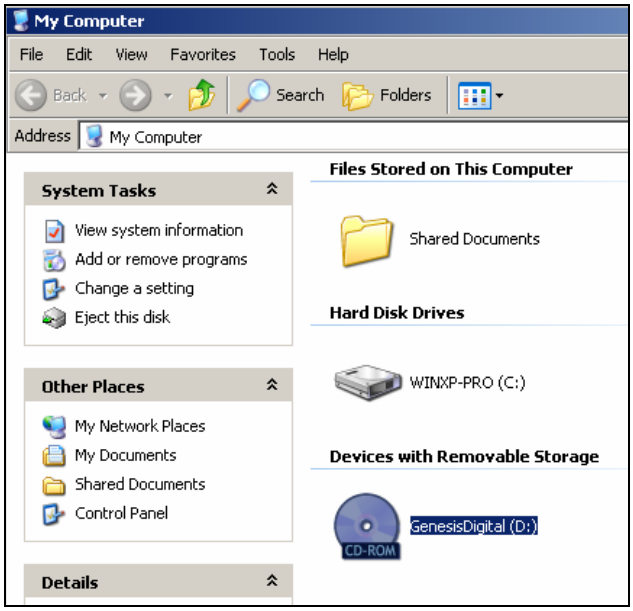
7. Click the button marked **Validate**.

8. With a valid Site Key, the program will now be successfully registered.

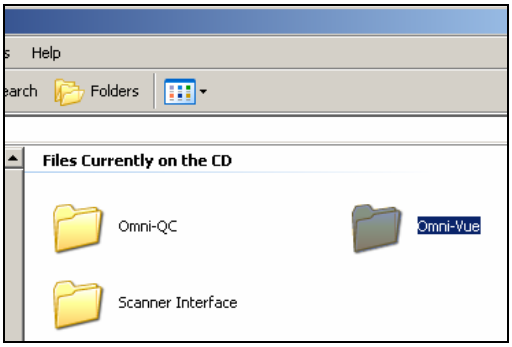
1. Insert the OMNI-QC Viewer Installation CD.

2. To begin installation, open **My Computer**.

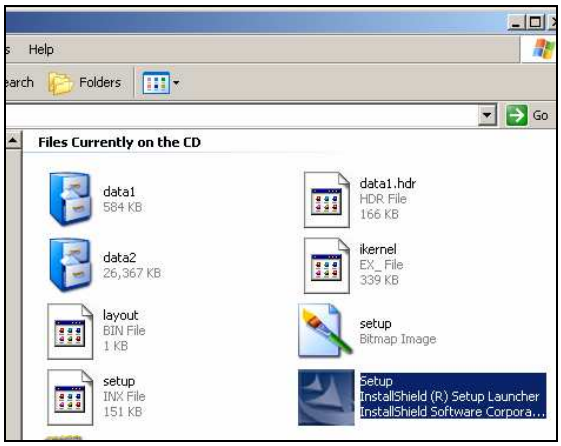
3. Click on the CD drive labeled **GenesisDigital**.



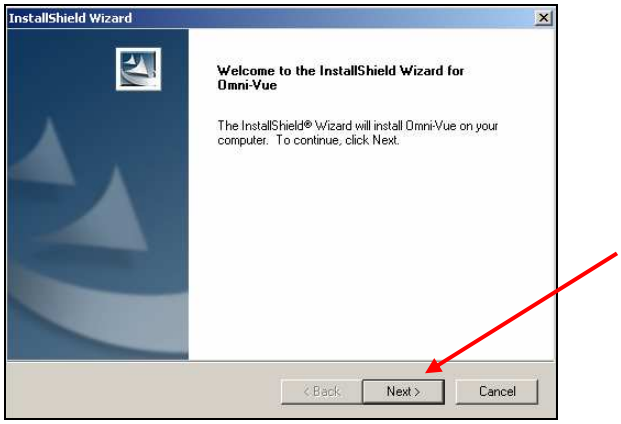
4. Click on the **OMNI-QC** folder.



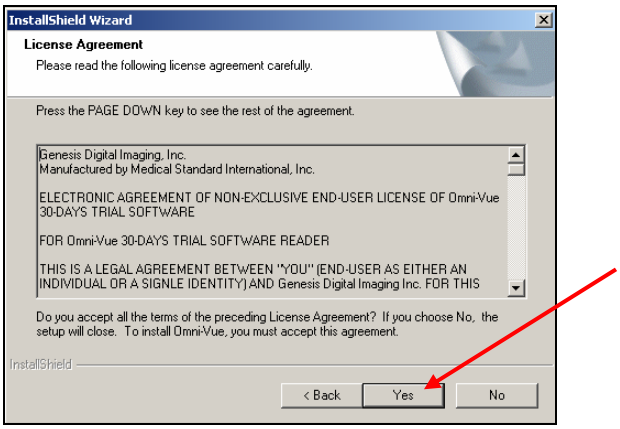
5. Click on the Setup icon to initiate the **InstallShield** Setup Launcher.



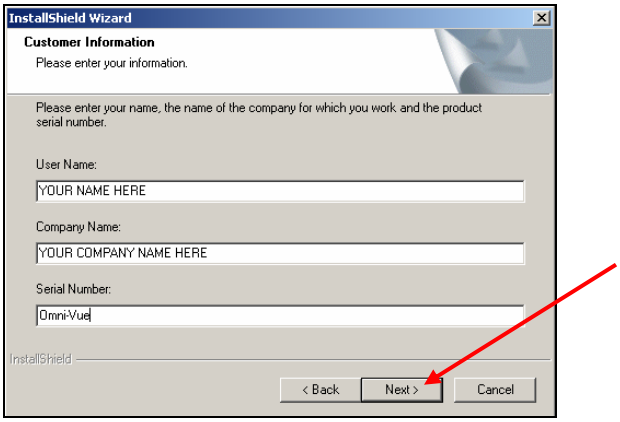
6. Click **Next**.



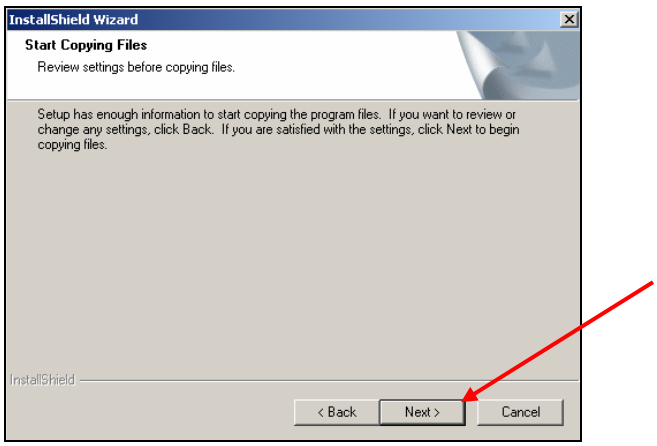
7. Click **Yes** if you accept the terms of the license agreement.



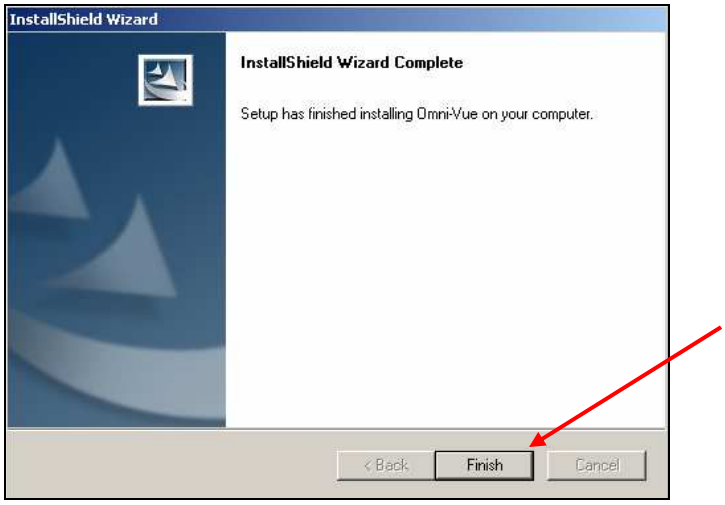
8. Enter **the principal owner's name** and the **name of your company** in the indicated areas. The serial number is "**Omni-QC**."



9. Click **Next**.



10. Click **Finish**. This will close the installation program.



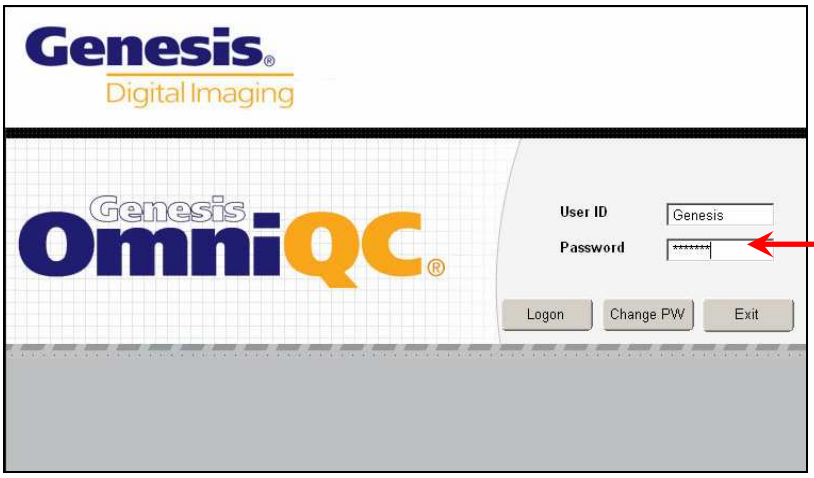
Chapter Two

How to Configure & Use QC

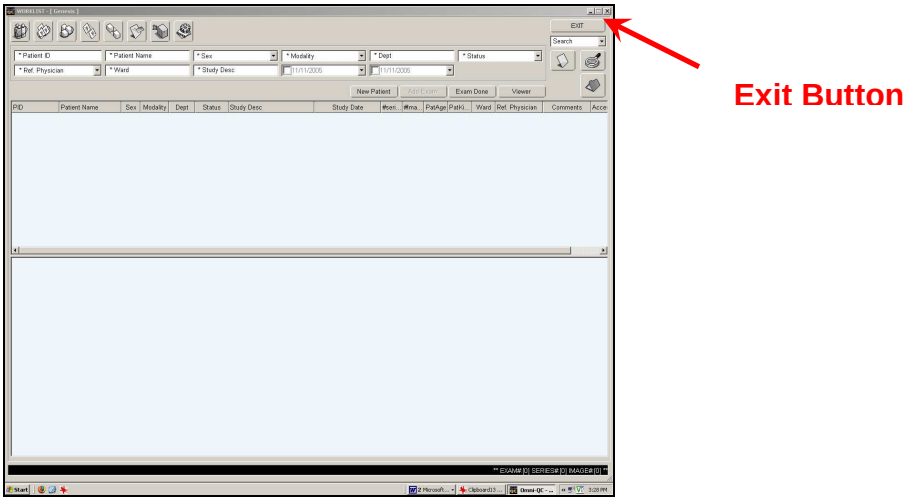
BEGIN & CONFIGURE OMNI-QC

1. Click on the **OMNI-QC** icon on the desktop to open the program.

2. Default **User ID** and **Password** are both "***Genesis***". To change the password, press the **Change PW** button and follow the screen instructions.

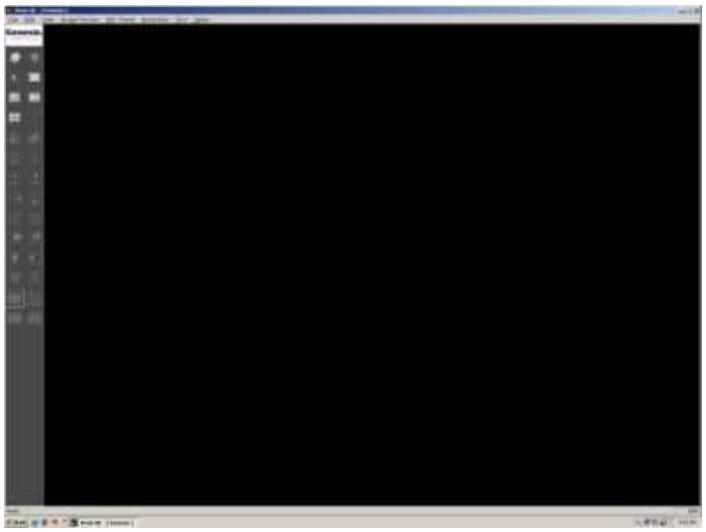


3. Omni-QC starts with the "**Work List**" display, shown in the following window.



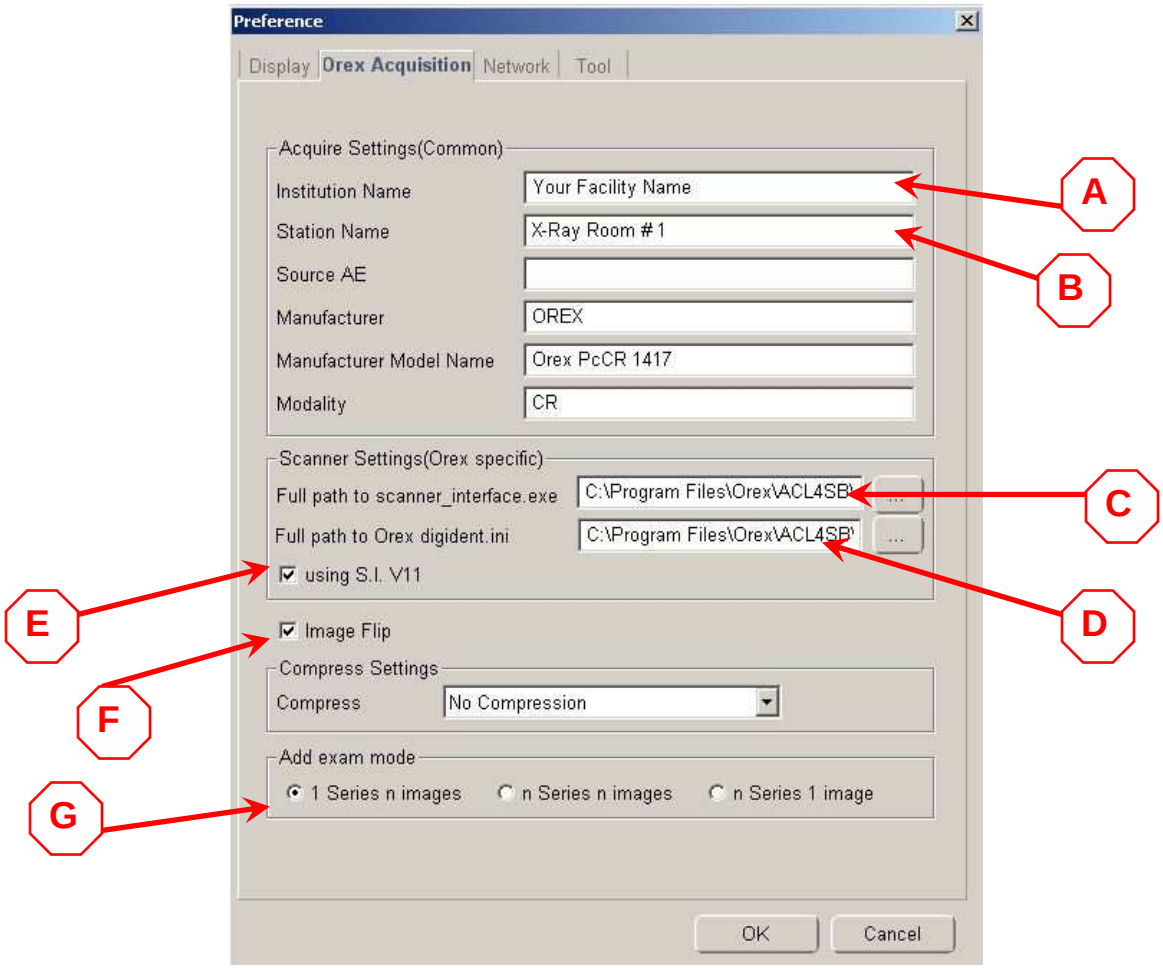
4. Click on “Exit” Button

5. Viewer is displayed with no image.



6. From the Tool Bar go to Option → Preferences

7. Click on "**Orex Acquisition**" Tab

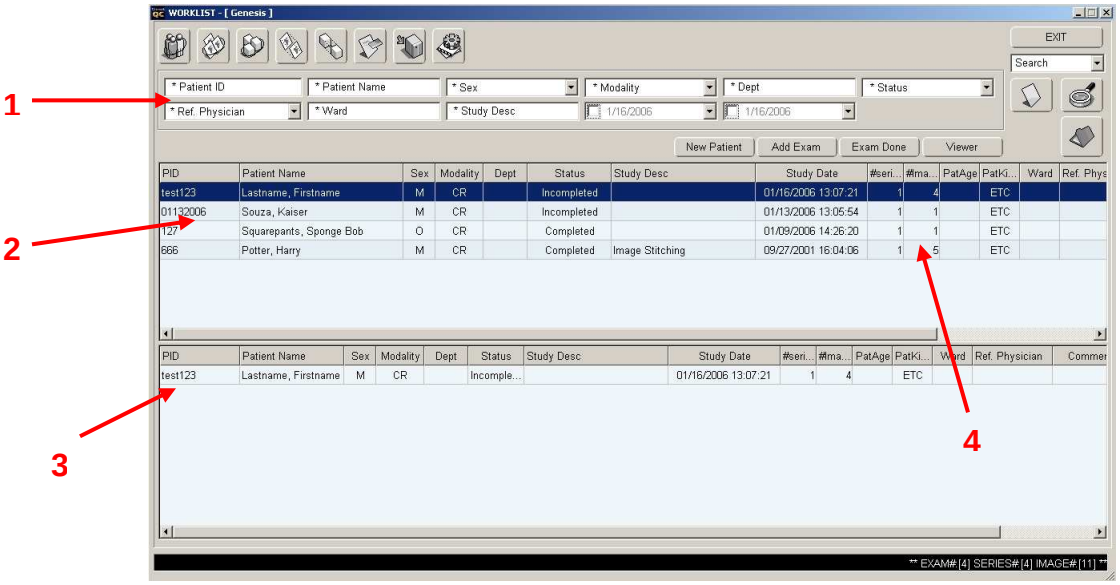


8. Enter the following information

A. Enter Your Facility Name
B. Station Name (optional)
C. Path to Orex Interface (default is displayed)
D. Path to Orex Digident file (default is displayed)
E. Check for using S.I. V11
F. Check for Image Flip
G. Check for “1 Series n images” for multiple images in one series

9. Press OK to go back to the viewer.

Worklist Overview



1. Query filter
2. Exam list
3. Previously Displayed exams
4. Number of exams, series and images

Worklist Database

New Patient — Add a New Patient

Add Exam — Add an Exam to an existing series

Exam Done — Save changes and send to destination

Viewer — Launch Omni-Vue DICOM Viewer **

Search/Refresh List

Open Exam in Viewer

Clear Search Filter

EXIT — Exit Worklist

DICOM Edit

Merge Exam

Merge Series

Split Exam

Split Series

Delete Exam

DICOM Send SCU

Worklist Configuration

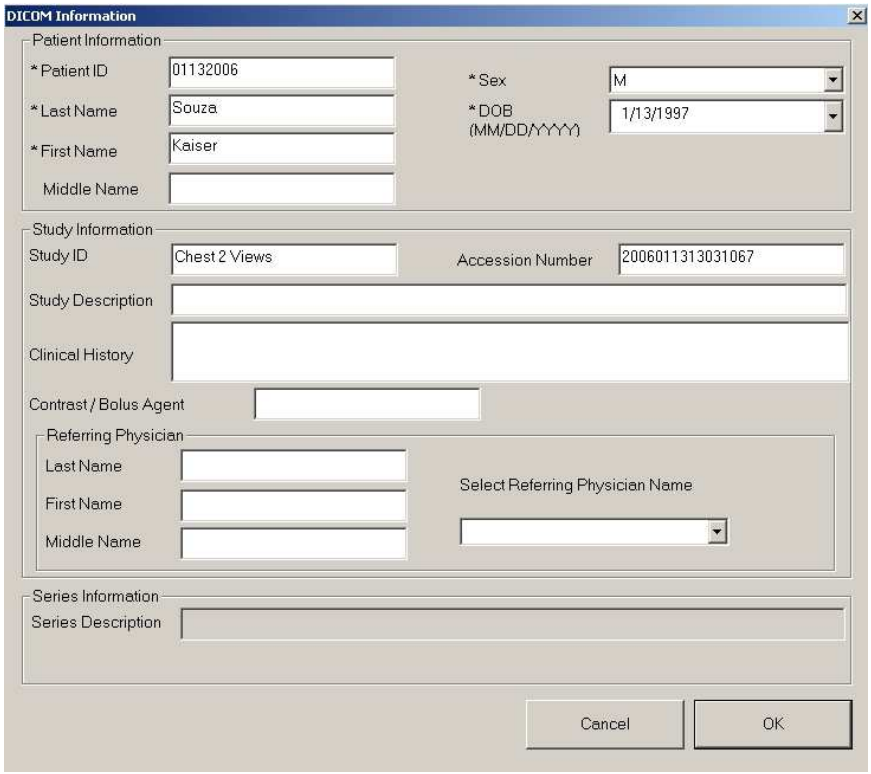
**** Requires installation Omni-Vue DICOM Viewer Software**

Change Patient Information

DICOM Edit: Change the patient information of the exam.
Merge Exam: The exam merges to another exam.
Merge Series: Merge the series to another series.
Split Exam: Split the series to another exam.
Split Series: Split the image to another series.

Merge Patient

Change the Patient ID, Name, Sex and date of birth of the exam.



Change DICOM information such as Patient ID, Name, Sex and date of birth.
Click ‘OK’
Click Refresh Button in the upper right hand corner to Display Changes

Merge Exam

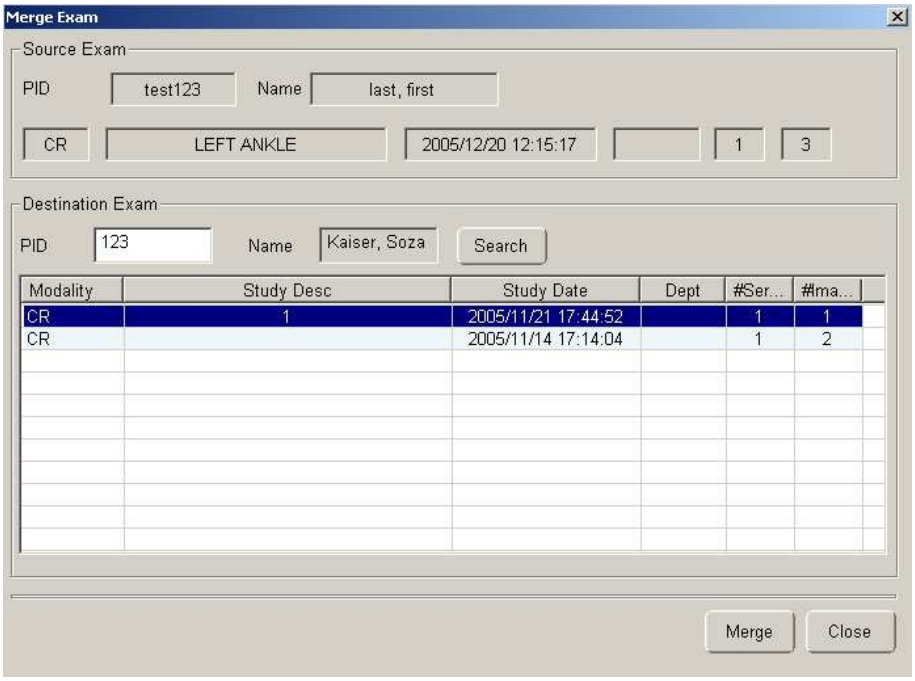
Merge the exam to another exam.

Right-click of the Merge Exam and click *merge exam*.

Display different exam lists of the same patient on the Destination Exam.
Click 'Merge' to be merged with exam.

Type [Patient ID] and click *search*.
If the patient information is in DB, list will be displayed on right portion of Destination Patient.
Click *the patient* and click *Merge* to change the patient information.

Merge with exam of another patient.
- Type in the [PID] of patient in Destination Exam and click *search*.
- Click the exam to be combined in list and click *Merge*.



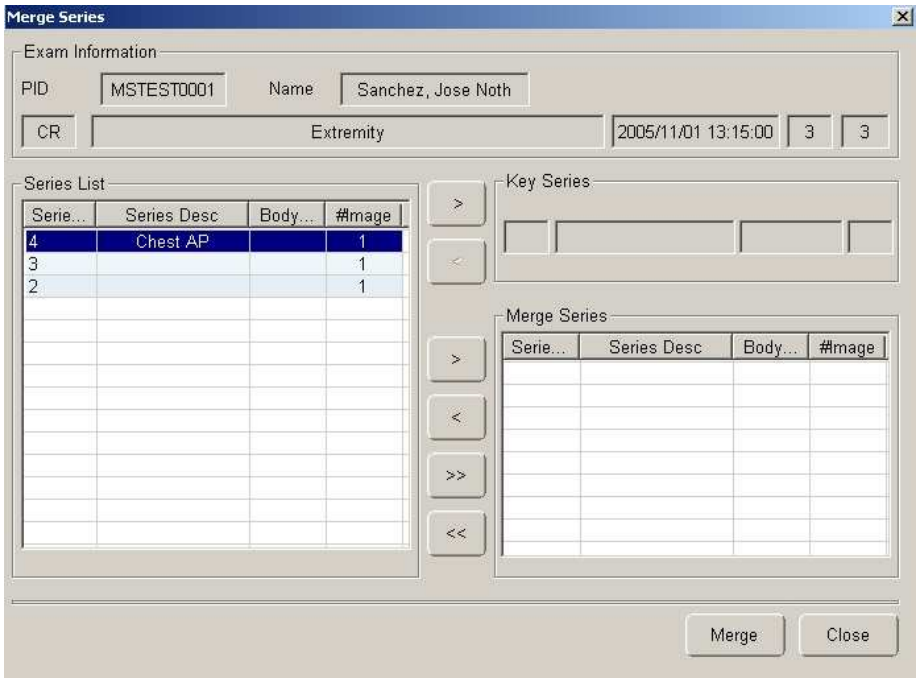
Merge Series

Merge the series to another series.

Right-click to apply Merge to one Series and click ‘Merge to one series’

Select key series to be seen as Series Title.

- Click the series on the Series List
- Click ‘>’ (Click ‘<’ to release)



Select the series to be merged to Key Series

- Click the series on the Series List
- Click ‘>’ (Click ‘<’ to release)

Click *Merge*.

Split Exam

Split series on exam as separate exam.

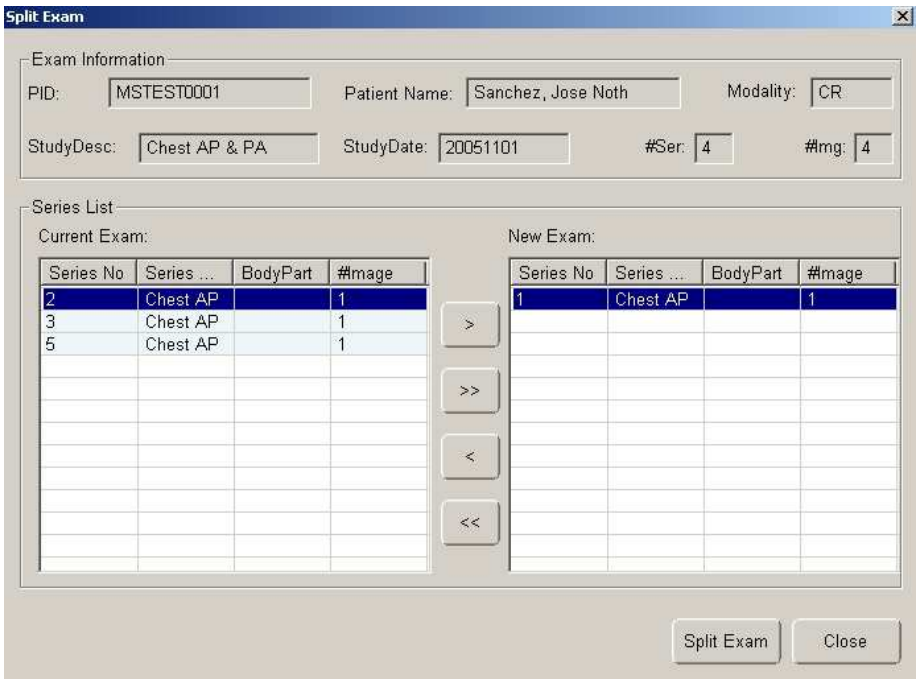
Right-click on exam, which apply Split Exam and click ‘split Exam’

Select series to be split.

- Click the series to be split on current exam list.
- Click ‘>’ (Click ‘<’ to release)

(Click ‘Shift or CTRL’ for multiple selection)
(Click ‘>>/<<’ to appoint/release all)

Click *Split Exam*



Split Series

Split image on series as separate series.

Right-click the exam, which applies Split Series, and click ‘Split Series’

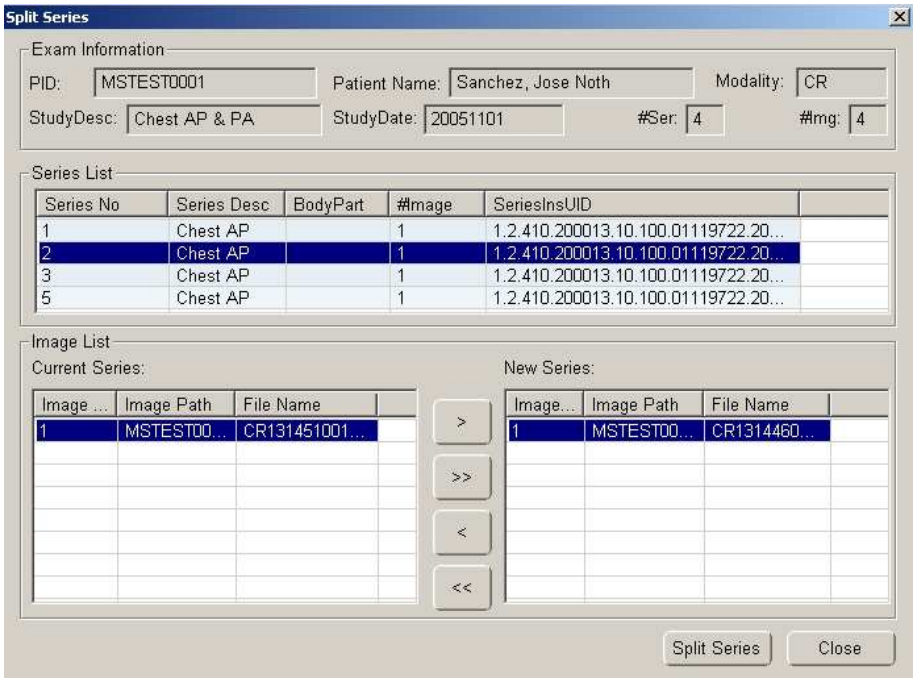
Click the image to be split on Series List

Select image to be split

- Click the image to be split on Image list
- Click ‘>’ (Click ‘<’ to release)

(Click ‘Shift or CTRL’ for multiple selection)
(Click ‘>>/<<’ to appoint/release all)

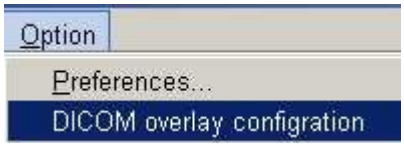
Click ‘Split Exam’



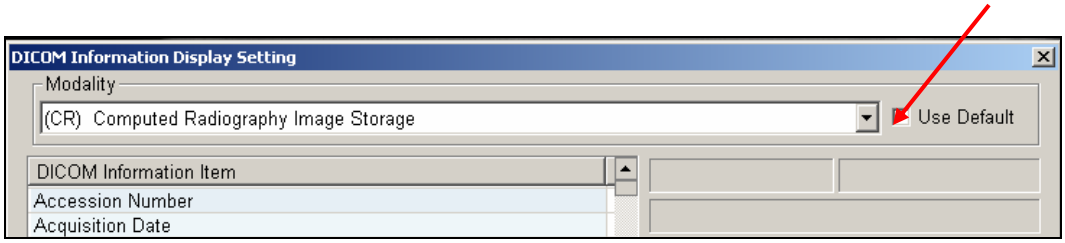
Split image on series as separate series.

Information Display Configuration

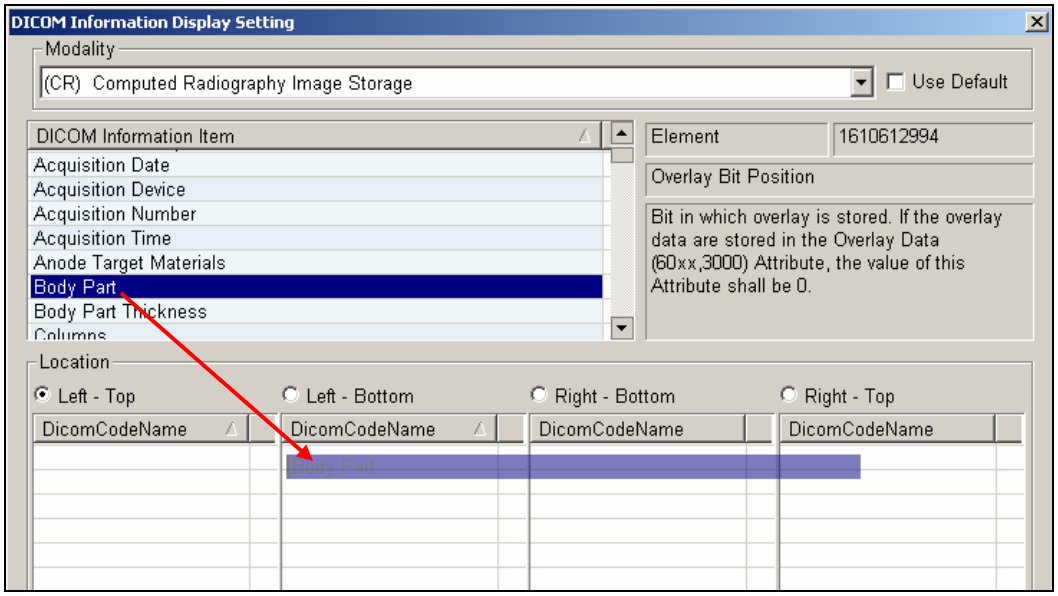
1. If you wish to change the information that is displayed on the image, select **DICOM Overlay Configuration** from the **Option** menu.



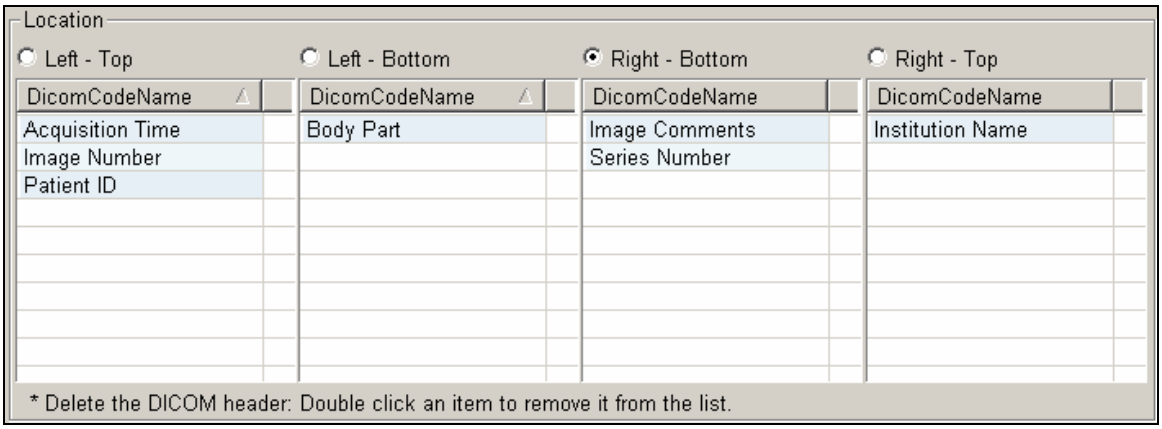
2. Uncheck the **Use Default** box.



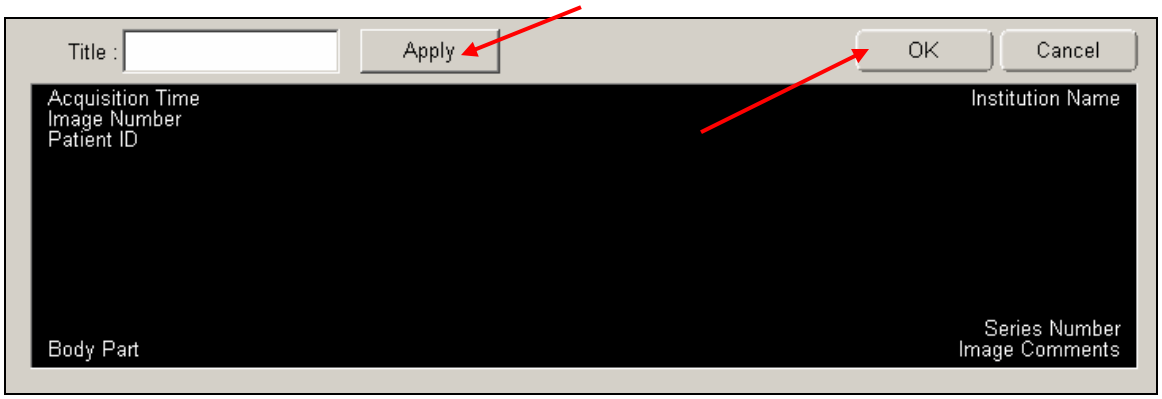
3. From the **DICOM Information Item** selection, click and drag the desired information to any of the four locations (Left - Top, Left - Bottom, Right - Bottom, Right - Top). ***(*Note: Be sure to click on the** title **of the item you wish to move. To select multiple items, click the empty space next to the item and drag the mouse).***



4. When you have finished moving the desired items to the appropriate locations, the **Location** box should appear as below. ***(*Note: Double click on an item to remove it from the list.)***



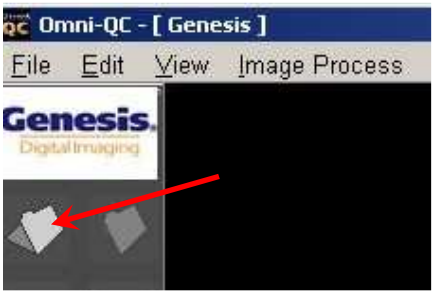
Below the Location box will be a preview of your new layout. You may label this particular layout with a title. To do so, type in the title and click **Apply**.



5. Click **OK** to save your changes

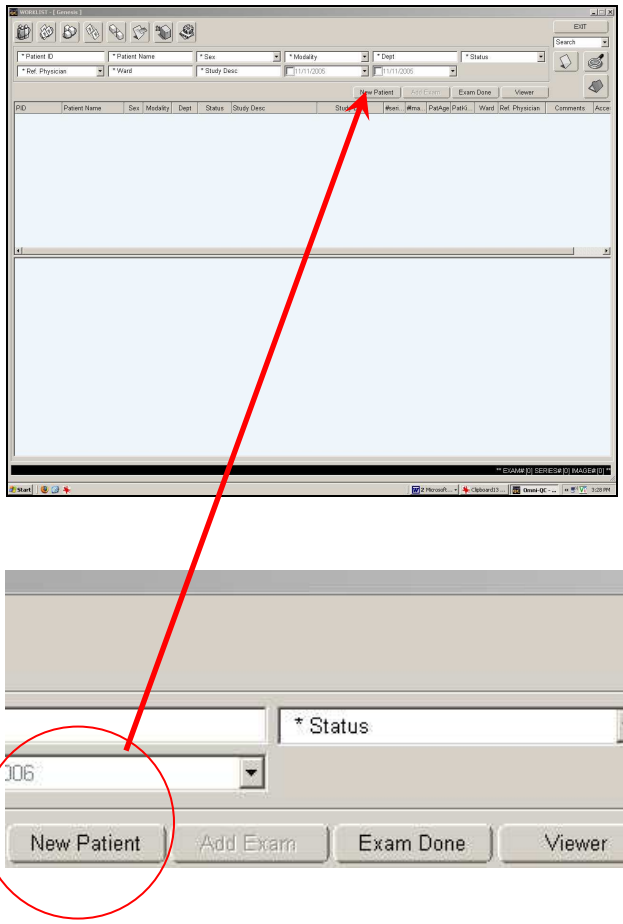
Start a New Scan

1. When starting from the Viewer, from the tool bar on the left, click on open folder icon to open the work list. When starting from the Worklist go to step 3.

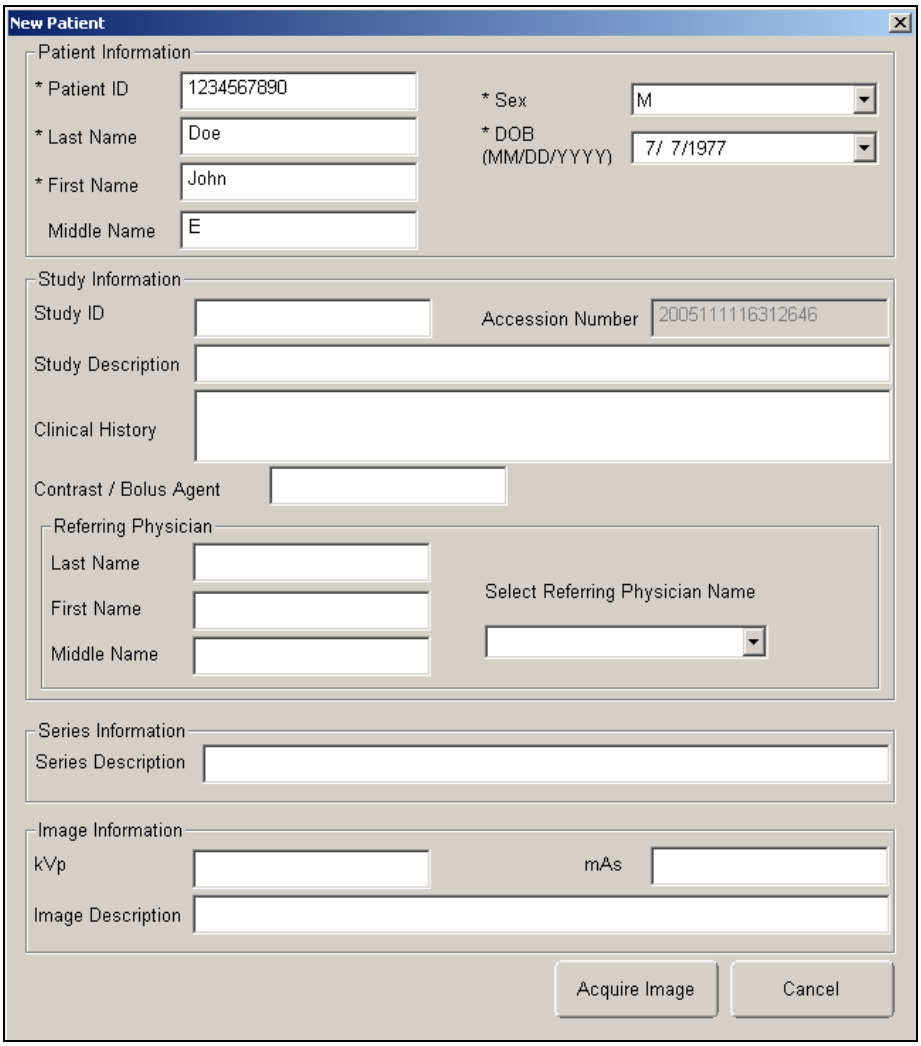


2. Work List will be displayed

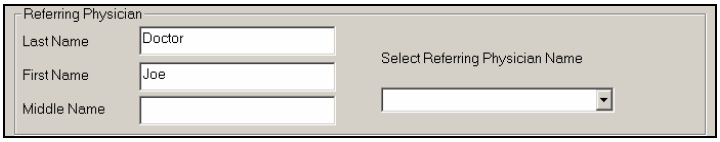
3. Click on the **New Patient** button.

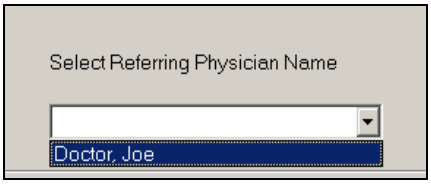


4. Enter the patient's information. (***Note: All fields marked with an asterisk (*) are required.***)

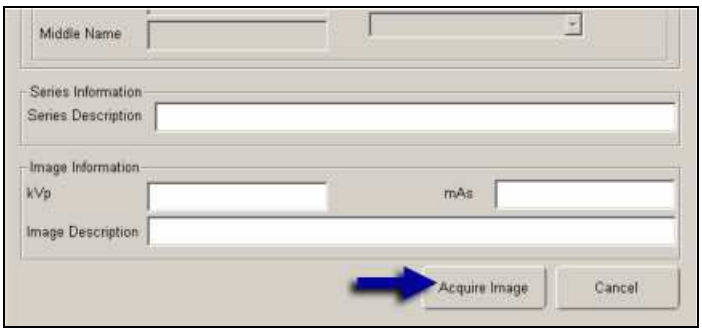


5. Under the **Referring Physician** heading, enter the information of the referring physician. After the first time this physician's name is entered, it will continue to appear as an option in the **Select Referring Physician Name** drop-down menu.





6. Click on **Acquire Image** to launch scanner interface.

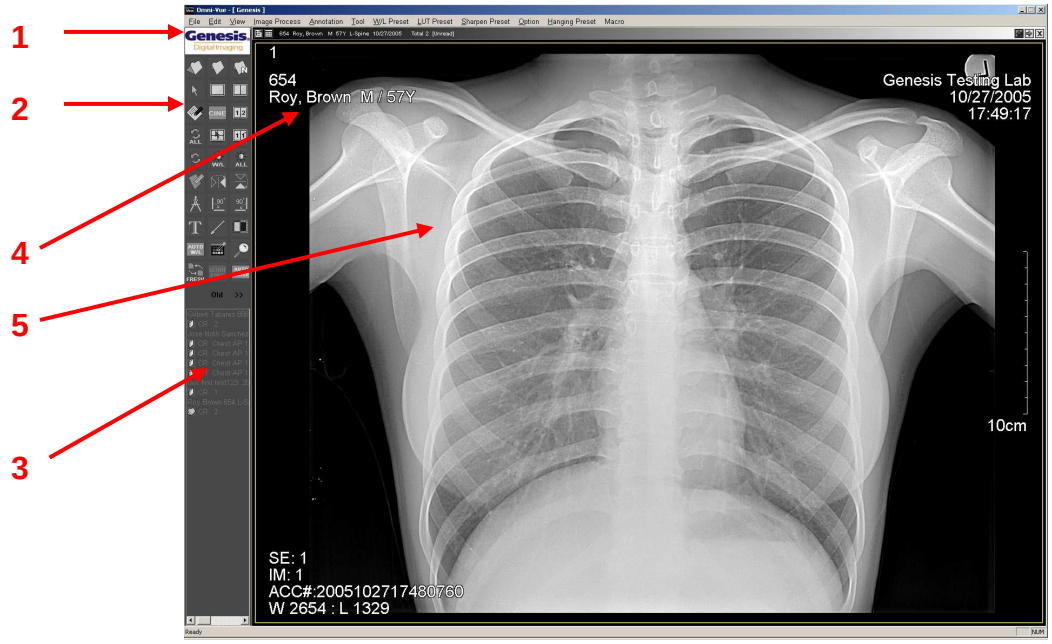


7. When prompted with "**Ready for scanning**," choose your anatomical area and proceed by properly inserting the cassette into the scanner. (For proper operation, please refer to your Kodak/Orex user manual.)

8. Upon completion of scan procedure, click on the **Exit** door symbol to launch Omni-QC Viewer.

9. Omni-QC Viewer is displayed

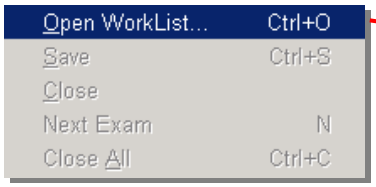
Display Window

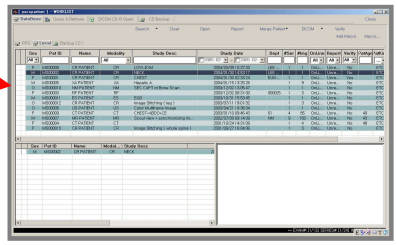


(1) Menu List (File, Edit, View, Image Process, Annotation, Tool, W/L Preset, Option)
(2) Menu Icons
(3) Exam List: Displays open exams and series
(4) Patient information
(5) The Image

Open Worklist

Or select **File** from Menu List and Click on **Open WorkList** (Ctrl+O)





Exam Close

Or select **File** from Menu List and Click on **Close**

This function closes the current displayed study. Or select **File** from Menu List and Click on **Close All** (Ctrl+C) This function will close all open studies.

Image Layout & Viewing Options

OMNI-QC supports four split view modes (Non, Horizon, Vertical, 2 by 2) and 8 view modes such as Series Layout, Chest CT View, Compare View, Stack View, etc.

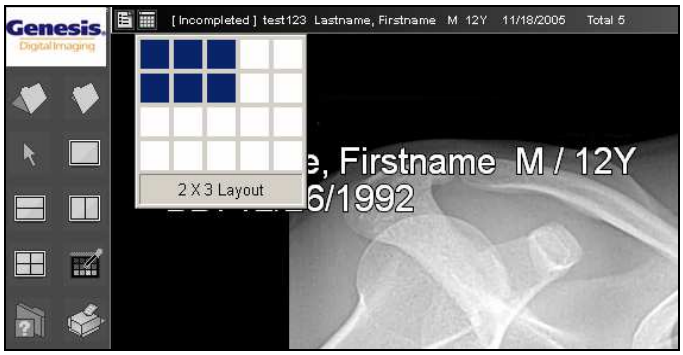
No Split

Horizon Split

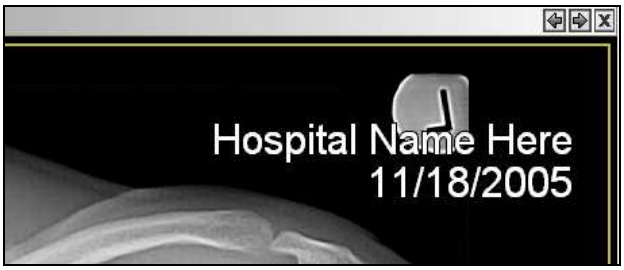
Vertical Split

2 x 2 Split

In order to view multiple images at once, click the **Tile** button to change the layout.

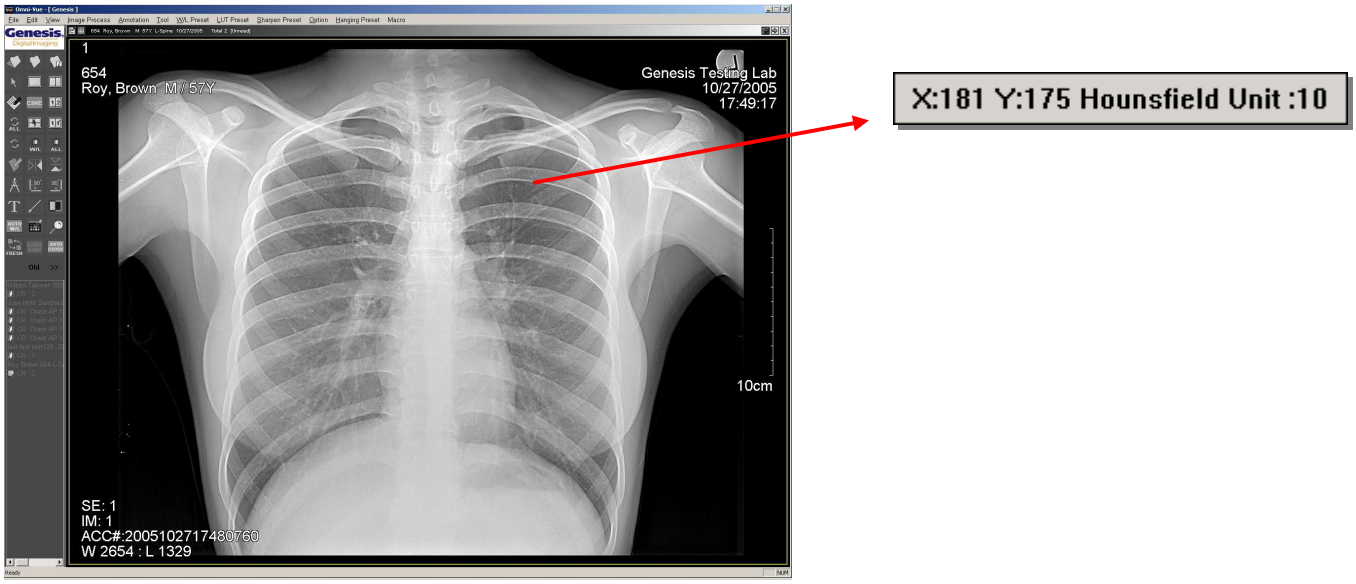


When viewing images one at a time, click the arrow buttons in the upper right-hand corner to advance images.



Pixel View

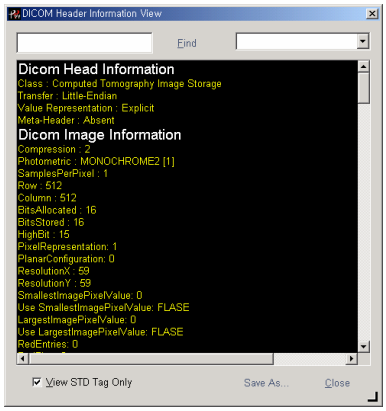
Displays pixel value and coordinates of selected location. Click on the icon and move your mouse over the image and Hounsfield Unit will be displayed.



DICOM Header View

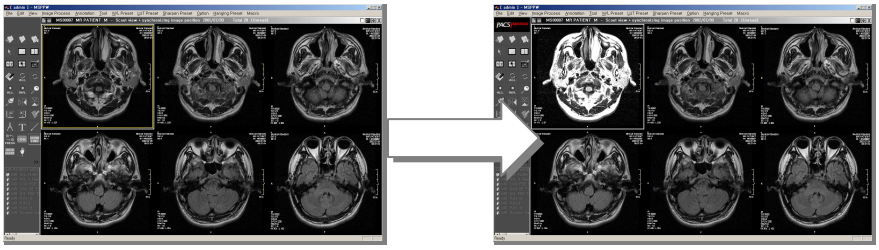
Or click *View→DICOM Header*

This function displays DICOM Header information.



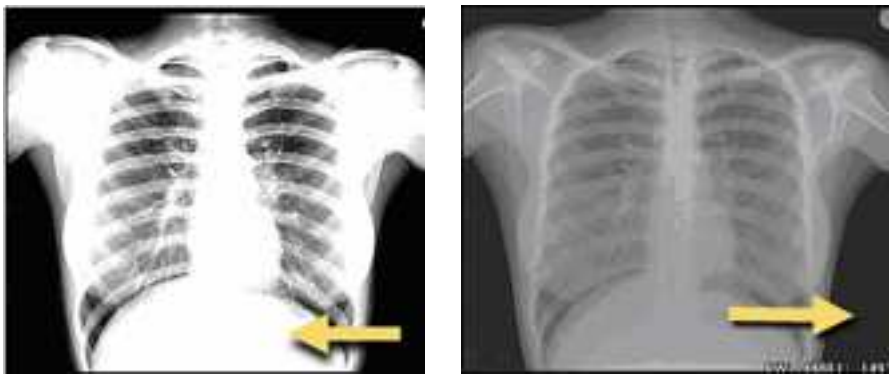
Window Level

Click *Image Process* → *Window Level* and cursor will be changed to W/L. Click the image and drag to the left and right, window level value will be changed. Short-cut key '*W*' to select.



Contrast & Brightness

To change the contrast of the image, **right click** with the mouse and move the **W/L** icon **left** (high contrast) and **right** (low contrast).

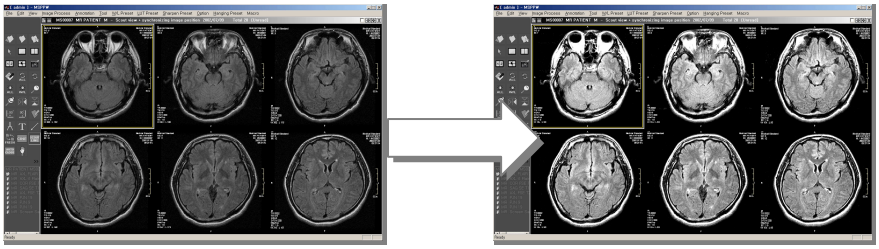


To change the brightness, **right click** with the mouse and move the **W/L** icon **down** (brighter) and **up** (darker).

To apply any of these settings to ALL images, press the **All Window Level** button, and use **left click** when moving the mouse.

Window Level all

Click *Image Process* → *Window Level* and cursor will be changed to W/L. Click the image and drag to the left and right, window level value will be changed.
OMNI-QC supports window level all function by right-click drag.



Reset

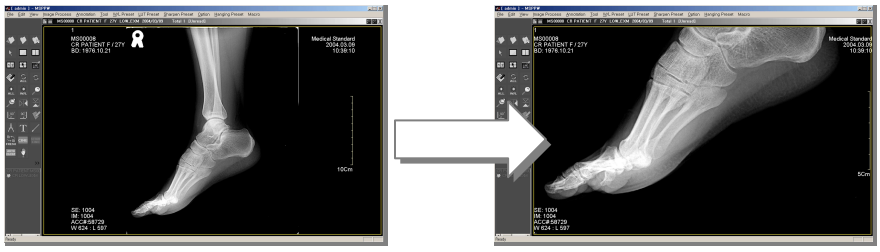
Or click Process → Display Original and click the icon on toolbar.
This function will return the selected image to its original setting prior to any modification

Reset All

Or click Image 'Process → Display All Original' or click the icon on toolbar.
This function will return all the images to their original setting prior to any modification

Zoom

After click *Zoom* button, click and drag the image where you wish to see. If there are multiple images, select all (Ctrl + A) and Zoom in/out all the images.
(Short-cut key: Z)

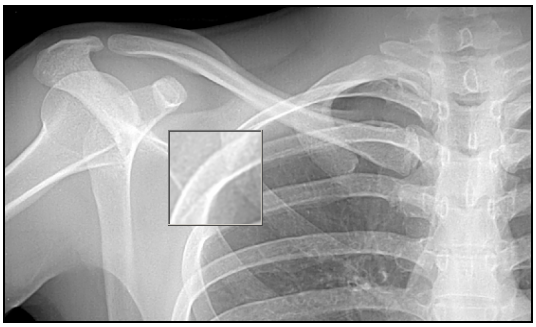


Magnify Glass

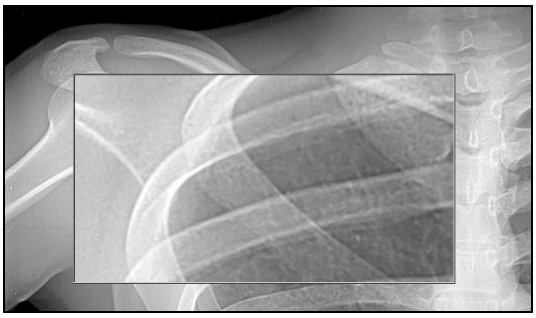
Shift + Mouse Drag Adjustment of magnifying glass
Ctrl + Mouse Drag Magnify/Reduction magnified image
Alt + Mouse Drag Adjustment of W/L

To magnify part of an image, first click on the **Magnify Glass** button.

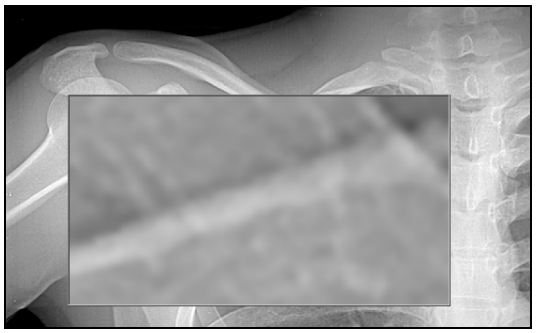
The magnifying glass will initially appear as shown below.



To change the size of the magnifying glass, hold **Shift**, click and drag the mouse to the desired size.



To change the zoom within the magnifying glass, hold **Control**, click and drag to the desired intensity. Drag **up** (lower magnification) and **down** (higher magnification).



Flip/Rotate Images

To rotate or flip images, use the corresponding buttons (**Flip Horizontal, Flip Vertical, Rotate CW, Rotate CCW**).

Flip Horizontal (Image Process → Flip Horizontal or click the icon)

Flip Vertical (Image Process → Flip Vertical or click the icon)

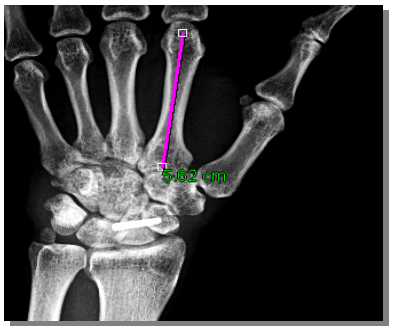
Rotate CW (Click 'Image Process Rotate CCW'

Rotate CCW (Image Process → Rotate CW or click the icon)

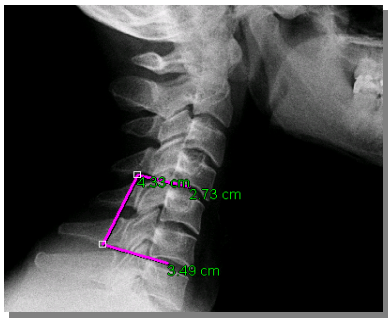
Measure

Tool Measure or (Short-cut key: M)

1) Length measurement: Drag the mouse to measure the length of image.

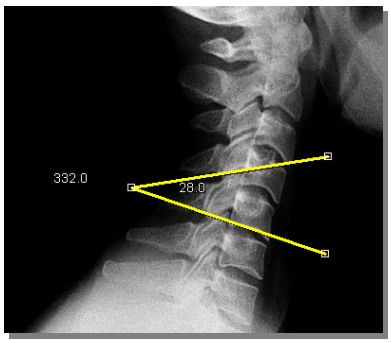


2) Measurement between two lines: To draw the line, click the short-cut key 'E' and measure the length between two points.



Angle

To measure the angle, click *Tool* → *Angle* or. (Short-cut key: A)
Drag the mouse on the image where you wish to measure.



Panning

Panning image moves to another part. After click the Panning button, click the image and drag to move the image. (Short-cut key: P)

Inverse

Right-click on image. Click Inverse

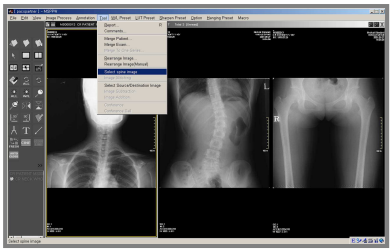
Or click on the icon.

Image Stitching

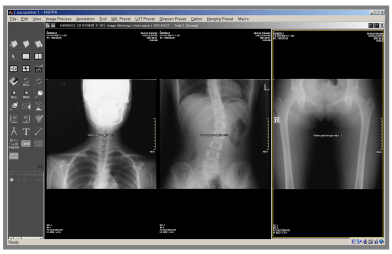
1) Open Series from Worklist

2) Change Display setting to show all images in series

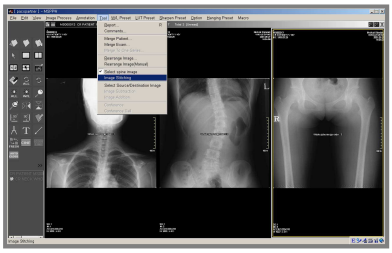
3) Click Tool ---> Select Spine Image



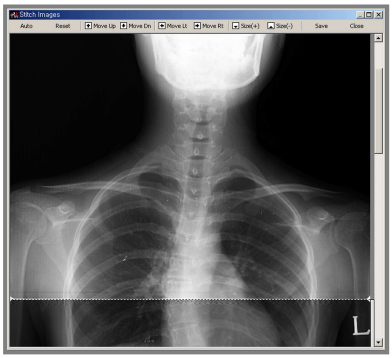
4) Select image by order. Following message will be appeared on the each image



5) Click Tool->Image Stitching

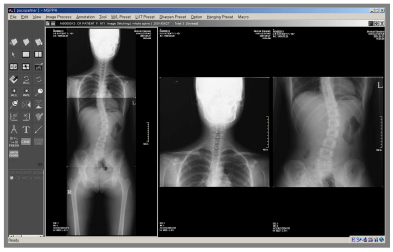


6) Adjust image using following menu



- Auto: Auto stitching.
- Reset: Recover to beginning.
- Move Up: Move the image upward
- Move Down: Move the image downward
- Move Lt: Move the image to the left
- Move Rt: Move the image to the right
- Crop: Crop the image
- Save: Save the image and close edit window

6) Click Save

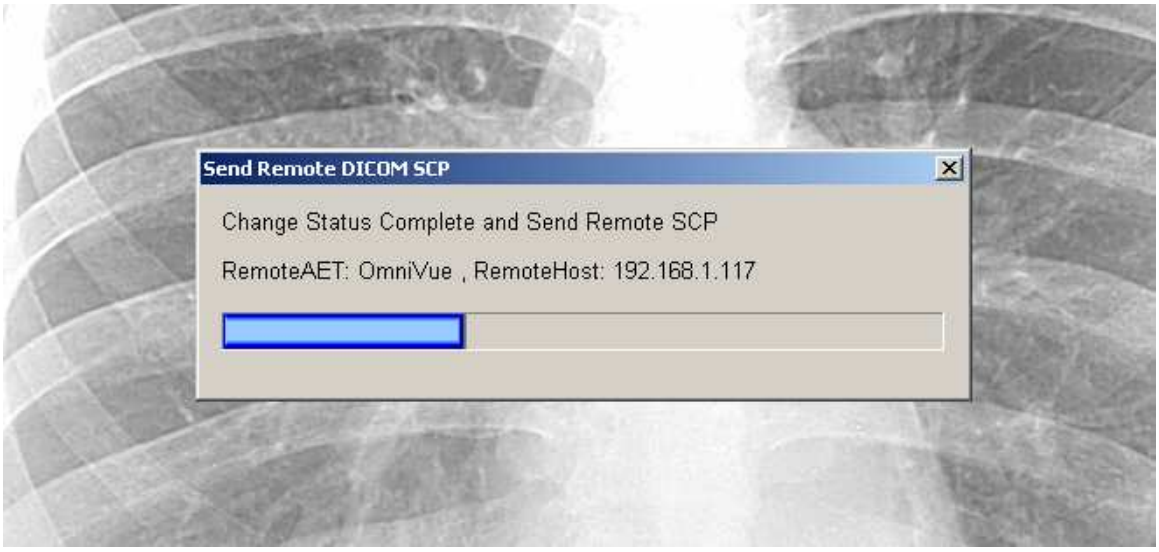


7) Stitched image will be added to the series

Save & Auto Send

To save the image with all the changes and send to a destination, click on this icon from the tool bar.

Clicking **Exam Done** will automatically send the images to the specified recipient(s). The progress bar shown below will appear, followed by a confirmation notice. **DICOM Send** must be configured prior to this step. Refer to "**Configuring DICOM Send**" at the end of this chapter.



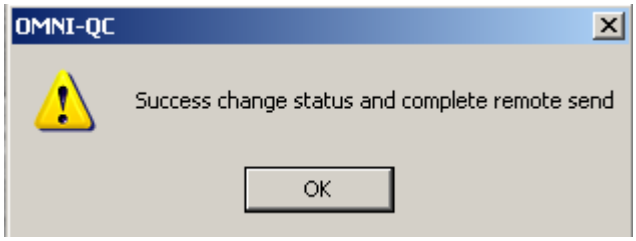
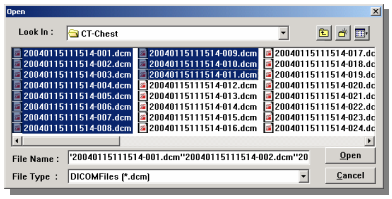


Image File Open (DICOM, Non-DICOM)

DICOM File Open

1) Click File->Open DICOM File

2) Select the file to be opened and click OK (Multiple selections with CTRL or SHIFT)



Non-DICOM File Open (JPG, BMP, TIFF)

Click File->Open Non-DICOM File

Select the file to be opened and click OK (Multiple selections with CTRL or SHIFT)

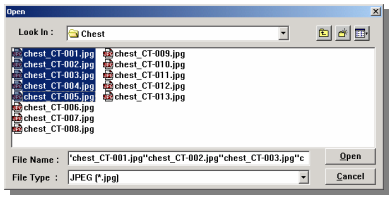
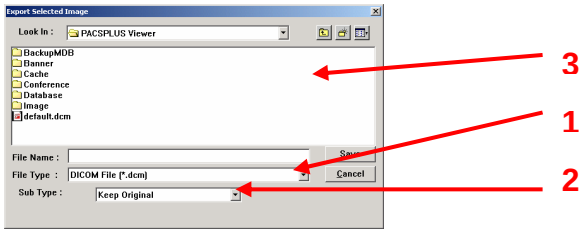


Image File Export

Images can be saved as DICOM, JPEG, BMP or TIFF.

Select the whole image or part of image and click File->Export.

Export Window



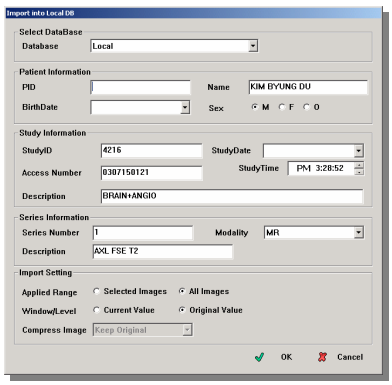
1. Select format to be converted
2. Select compression mode in Sub Type.
3. Select the location and click Save.

Compression ratio value
A. Keep Original – Transmit the original image
B. Uncompress – Uncompress and transmit original image
C. Lossless JPEG – Transmit Lossless compression mode (½ ~ ¼ of original image)
D. Lossy (Minimal, Mild, Moderate, Severe, Very Severe) – Transmit lossy compression mode.

Image File Import

Open an image by DICOM File Open or Non-DICOM Open and click File->Import.

Type in the information



Database: Select Local or Conference Folder
Patient Information: Input patient information
Study Information: Input exam information
Series Information: Input series information
Applied Range: Select the image to be imported (Selected Images, All Images)
Window Level: After open it in OMNI-QC and select W/L (Current Value) or Image W/L (Original Value)

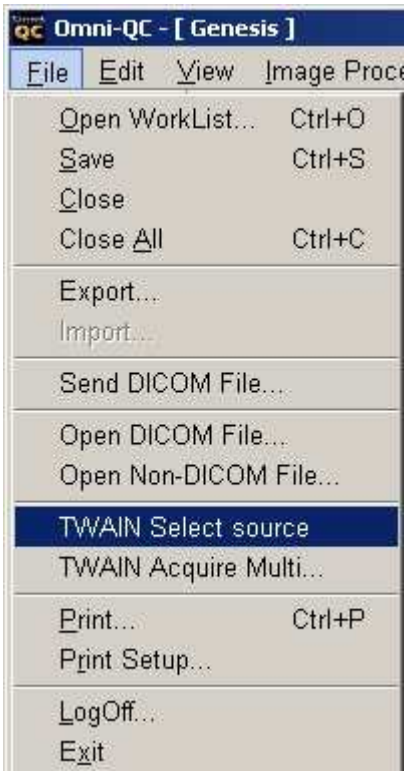
Click OK to finish

Twain Driver Support

Using external twain drivers, you can control film digitizers and acquire film or paper images.

How to Use

1) Click File → Twain select source from top menu.

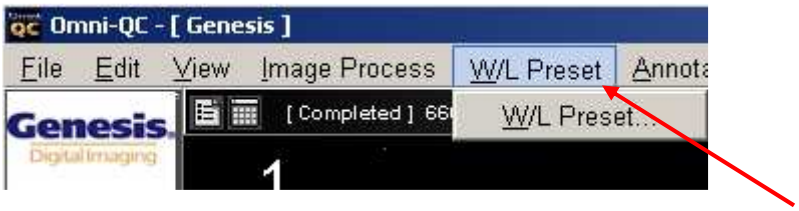


2) Select TWAIN driver.
3) Insert film at the digitizer.
4) Click File → Twain Acquire Multi.
5) Run External Twain program.
6) Scanned image is display on image window of Omni-QC.
7) Click File → Import from main menu.
8) Type patient, study and series, etc.
9) Click OK to store it to the local database of Omni-QC.
10) You can find imported image in Worklist window of Omni-QC.

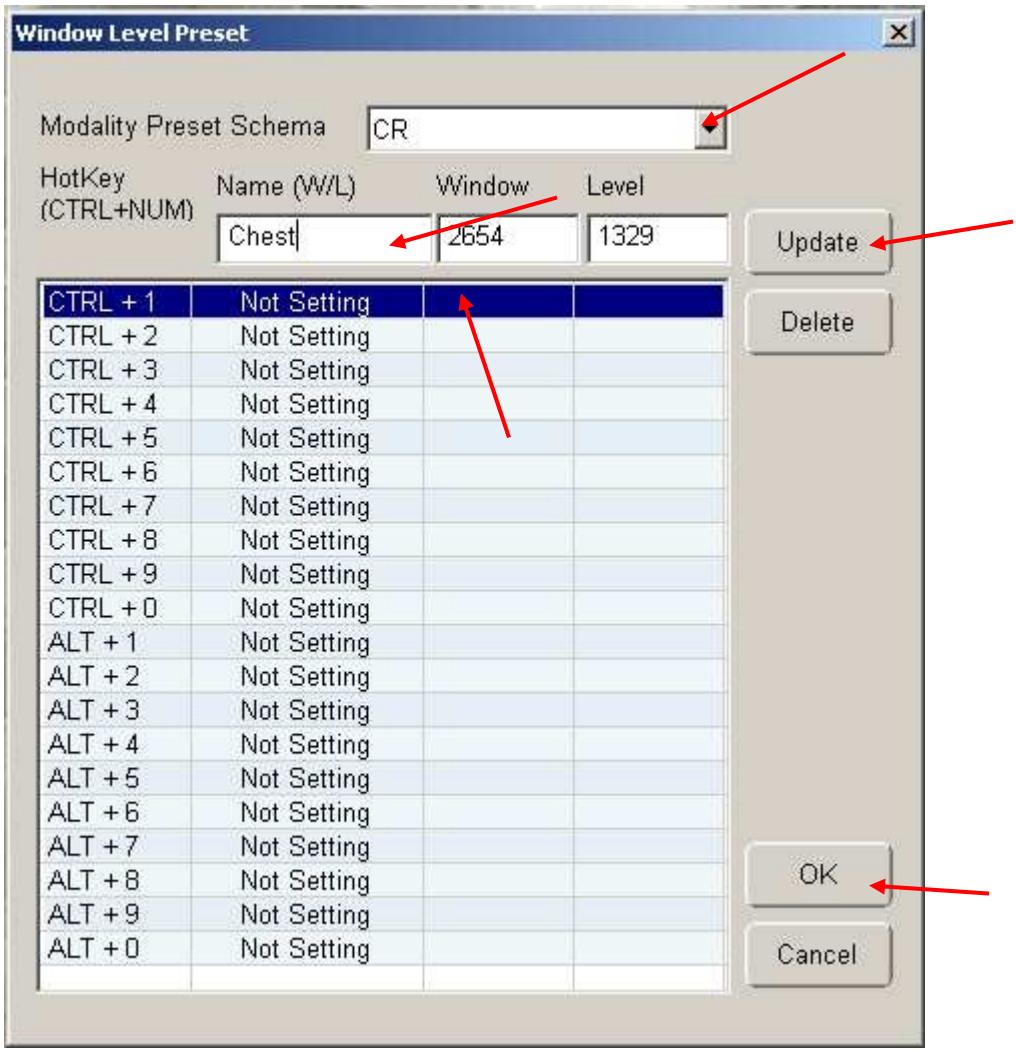
W/L Preset

Adjust window level easily with registration of short-cut key.

1) Adjust W/L and click ‘W/L Preset→W/L Preset’



2) Modality and W/L value will be input automatically.
3) Click the short-cut key
4) Type in name “Chest”
5) Click “Update”
6) Click “OK” to register



Re-Arrange Processing

Arrange the sequence as new.

Re-Arrange Image (Auto)

Click Tool->Rearrange Image

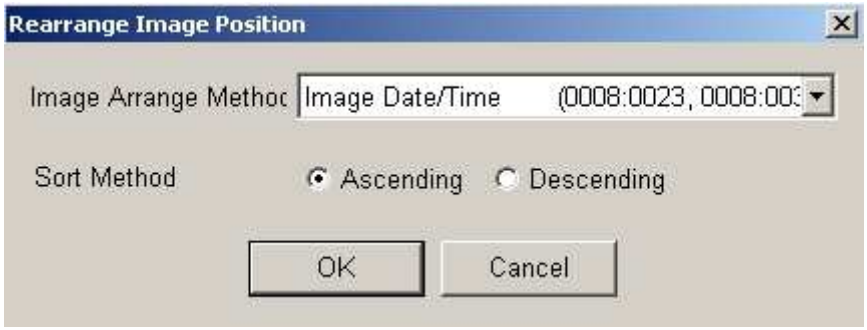


Image Arrange Method: Acquisition Date/Time, Image Date/Time, Image Number
Sort Method: Ascending, Descending

Rearrange Image (Manual)

1) Click Tool->Rearrange Image to change the mode of Rearrange Image. The rim of image will be changed to the blue color.

2) Click the image to change with green color.

3) Insert between two images. If you move the cursor between two images, White bar will be created and click to insert.

4) To change the location with another image. Move the cursor on the image, which you wish to change, and the rim will be red color and click to switch the location.

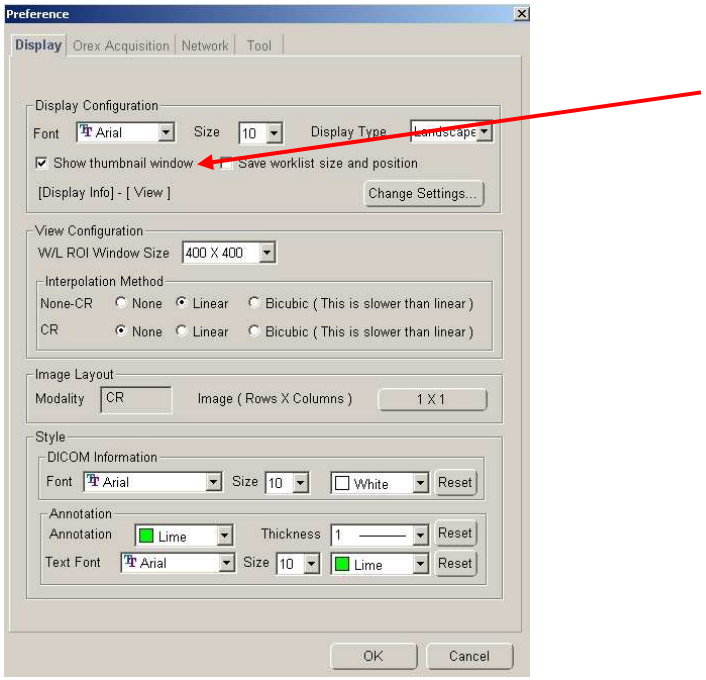
Thumbnail Window

Thumbnail window is not configured by default. If you want to use thumbnail window, please configure Thumbnail window as described below.

How to Configure Thumbnail Window On/Off

1) Select Option -> Preference ->Display

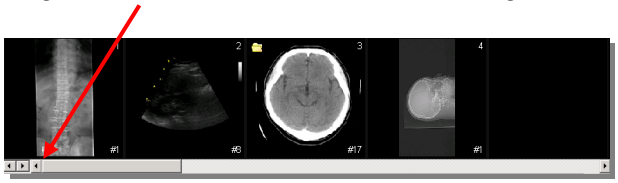
2) To use Thumbnail window on image display window, **check** Show Thumbnail window from Viewer tab or uncheck to not use the window.



How to Hide/Show Thumbnail Window

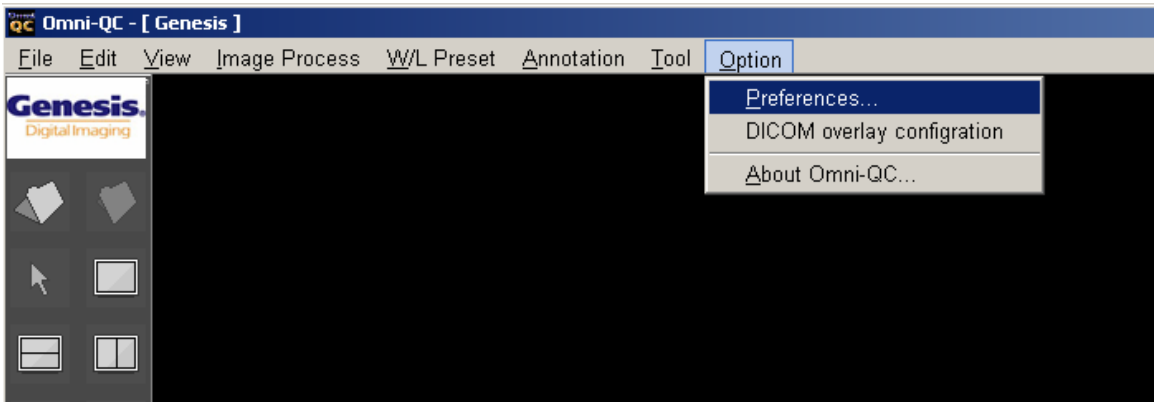
1) Open exams from Worklist window.
2) Thumbnail image window is displayed when you move the cursor to the bottom of image display window and hides when you move the cursor away.
3) Thumbnail image window displays yellow opened mark on opened series or exams
4) Drag thumbnail image and drop into display window

Layout of Thumbnail Window may be modified by clicking on “<” or “>” button

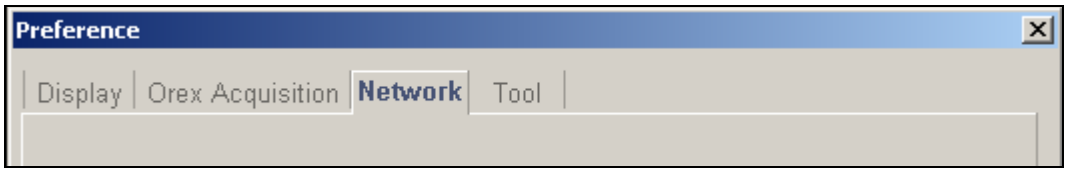


Configuring DICOM Send

1. In the **Option** menu, select **Preference**.

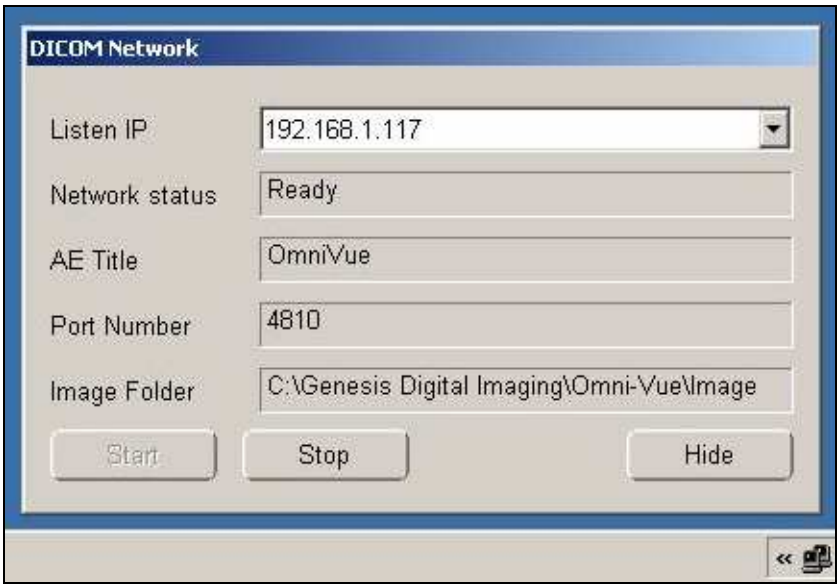


2. Open the **Network** tab.

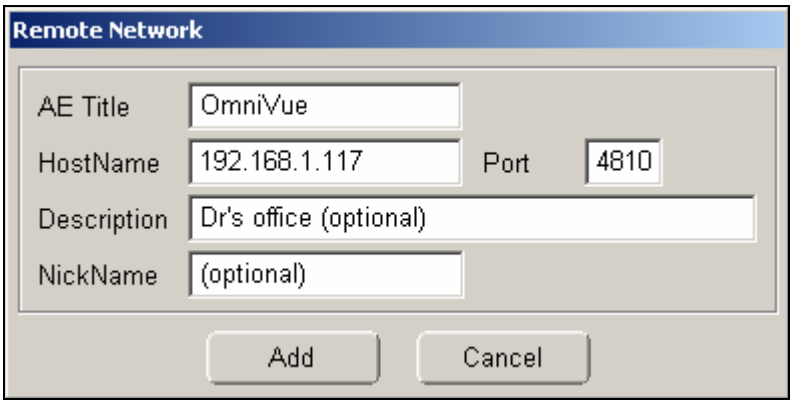


3. Click the **Add** button to add a recipient.

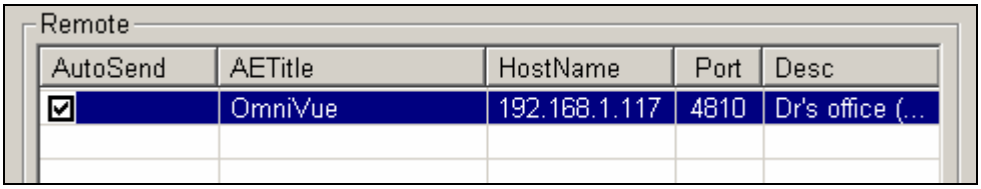
4. In order to add a computer with Omni-Vue as a recipient, obtain the following information from the workstation that will be receiving the images. Double-click on the computer icon to obtain this information:



5. Enter the information as shown in the example below, and click **Add**.

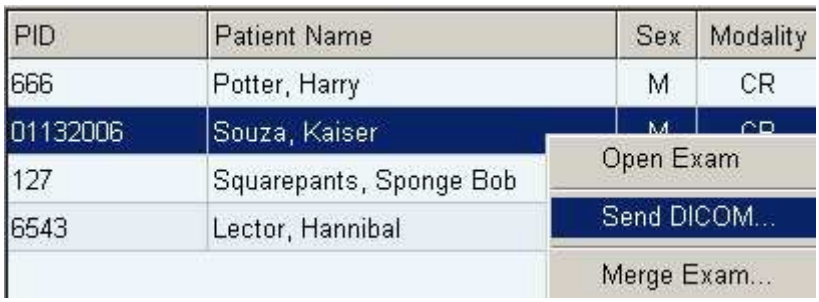


6. Once this information has been entered, you may select the check box of the recipients you wish to automatically receive the images. ***(*Note: Be sure to check the box ONLY if you wish for this computer to receive images EVERY time you complete an exam.)***

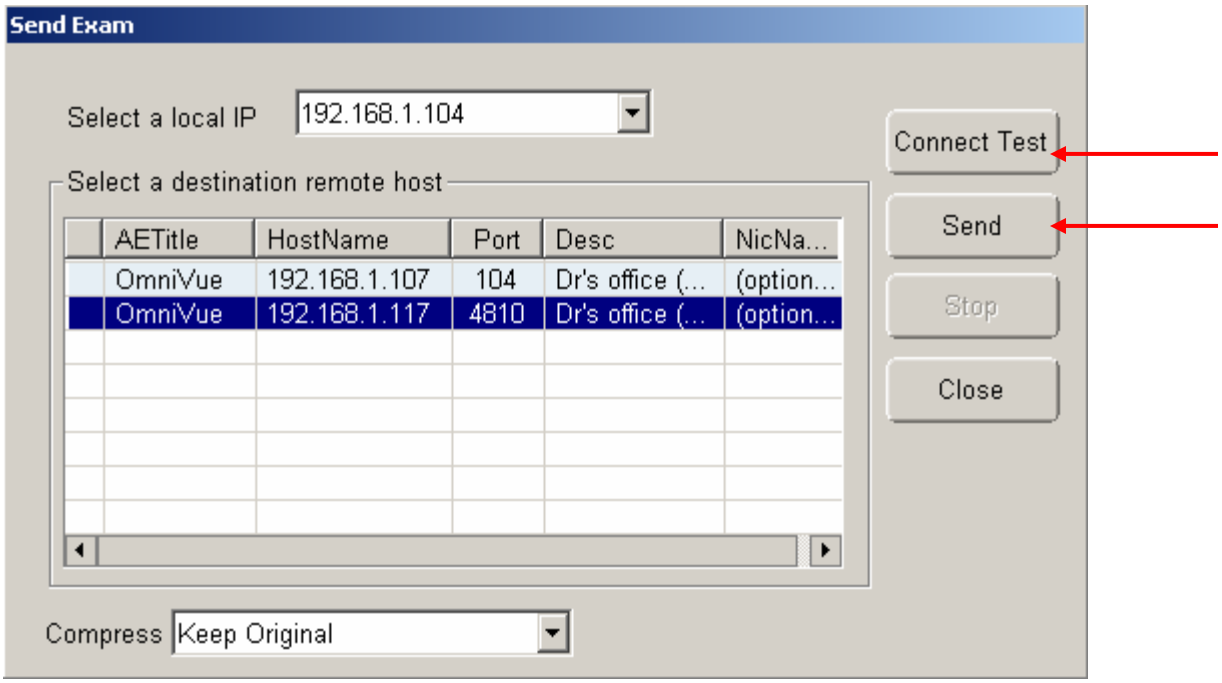


Manual DICOM Send

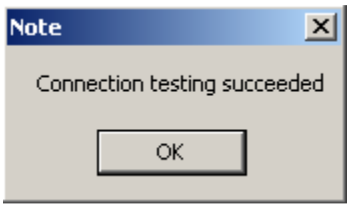
1. From the Worklist, choose the patient whose images you wish to send by right-clicking on his or her information. Select **Send DICOM**.



2. The **Send Exam** window should appear as shown below. Select the desired destination from the list. Click **Connect Test** to confirm a working connection between sender and recipient.



3. If a connection exists, the following window will pop up to confirm.

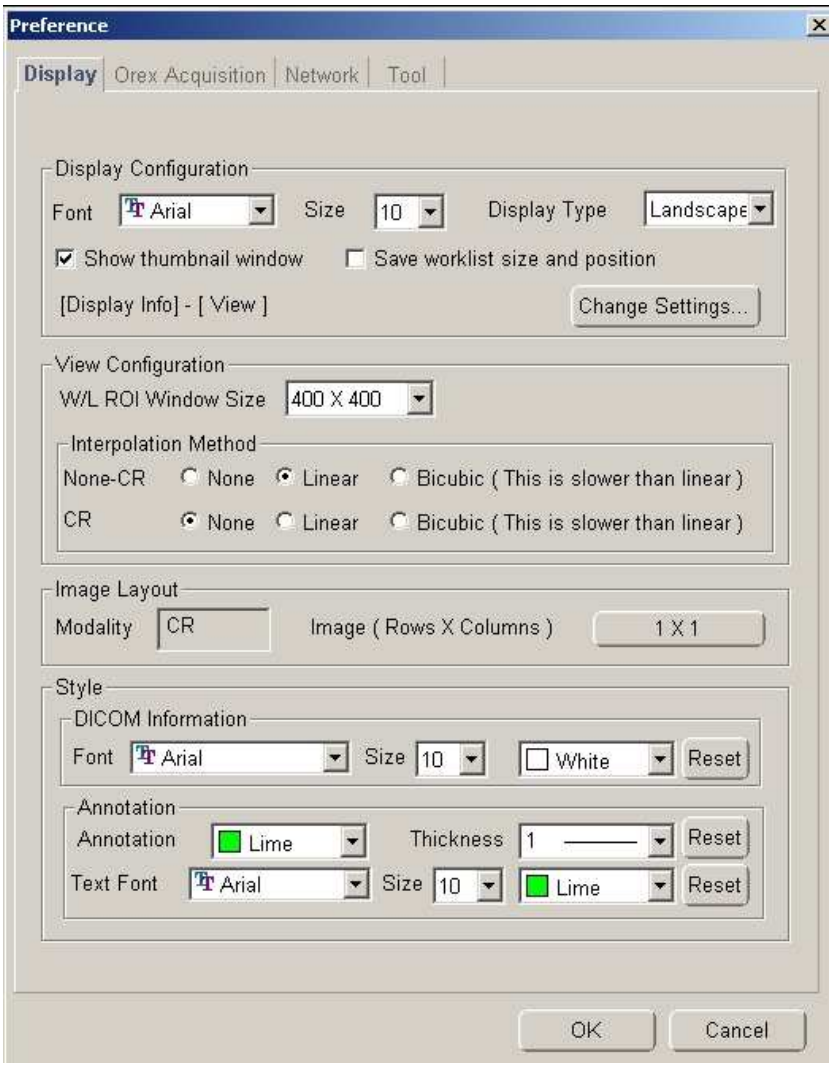


4. To proceed with sending, click the **Send** button.

5. If the Connection Test fails, the following window will appear. Check the recipient's information to be sure it has been correctly entered.

Display Preferences

Display



Screen Font: Font used in Omni-QC.

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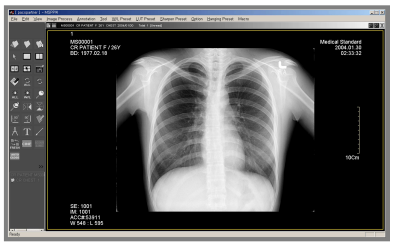
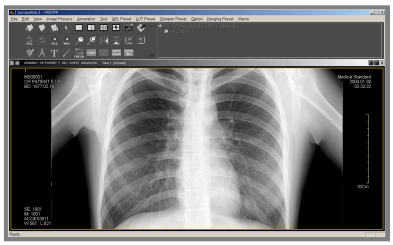
Display Type:

A. Landscape: The toolbar will be displayed on the left (Left image)
B. Portrait: The toolbar will be displayed on top (Right image)





Show thumbnail window: Activate Thumb Nail Window. Refer to Chapter 2: How To Use Omni-QC– Thumbnail Window.

Worklist position save and restore: When checked, Omni-QC will save current Worklist position.

Window/Level ROI Size
Set size of preview window when Window Level is adjusting. (Restart OMNI-QC to apply)

Interpolation Method
To apply interpolation (anti-aliasing) functions to different modalities.

None: Do not apply interpolation on image.
Linear: Apply linear interpolation on image.
Bi-Cubic: Apply more linear interpolation on image.

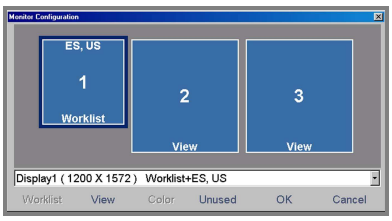
DICOM Information
Change default font settings for DICOM information

Annotation
Appoint color, line thickness and font to be used in Annotation

Dual Monitor Display Setting

Note*: Multi Monitor setting must first be set in Windows prior to the following.*

Click "**Change Settings**" to display Monitor Configuration window (below).



To designate monitor, you must select monitor and click on one of following buttons.

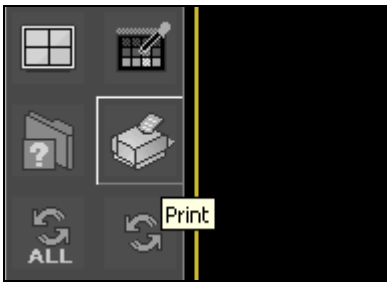
Worklist: Designate Worklist monitor
View: Designate view monitor
Unused: Disable selected monitor

Chapter Three
Applications

Adding a DICOM Printer

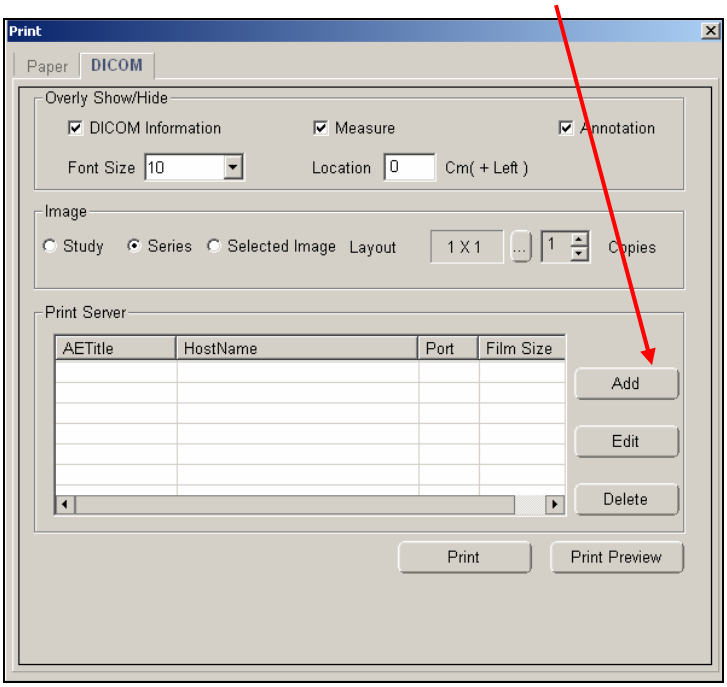
Note: You must first have an image on file and selected before adding a printer.

1. Click the **Print** button to open the Print window.

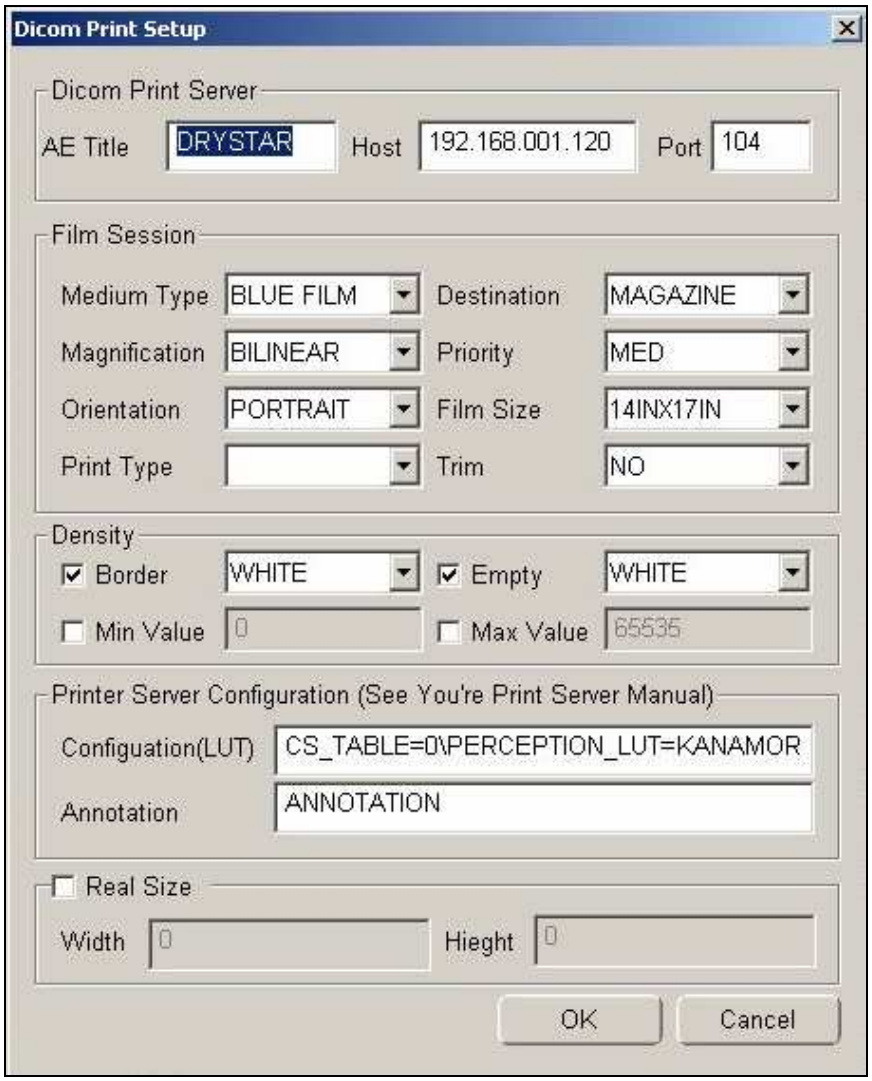


2. Choose "**DICOM**" tab for DICOM Printer.

3. The first time you print an image, you will have to Add a printer.



4. Complete the form with your printer information. Consult your printer manual, as this information will be specific to your particular printer. See below for an example.

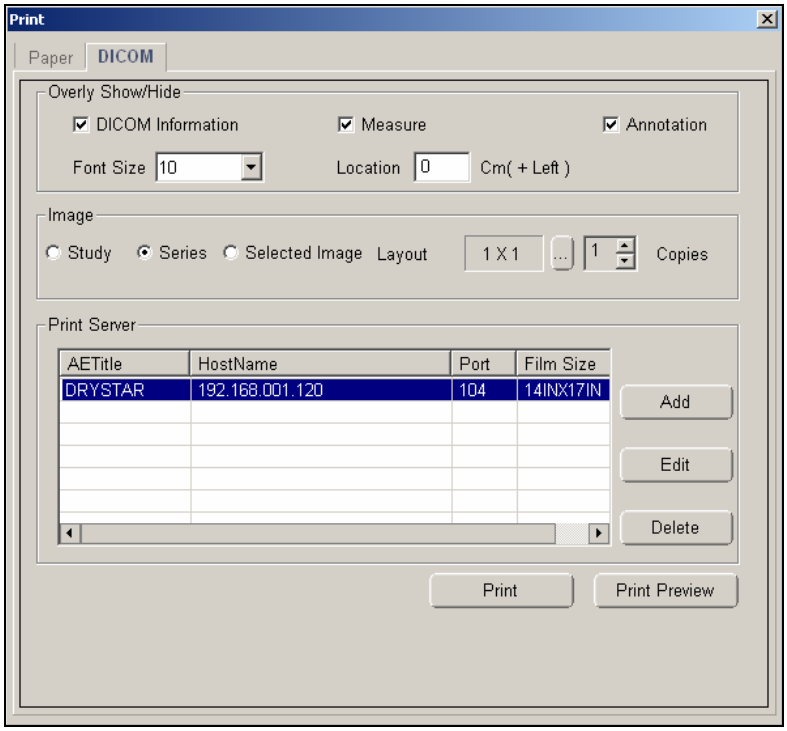


5. You are now ready to print.

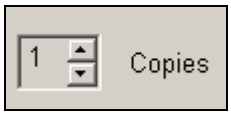
Printing and Printing Options

1. Highlight an image and click the **Print** button.

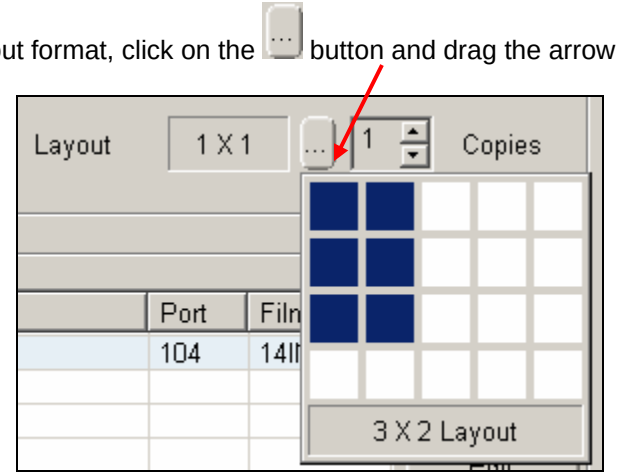
2. The following box will open, allowing you to change your printing options.



3. To change the number of copies, click the up and down arrows next to "**Copies**."

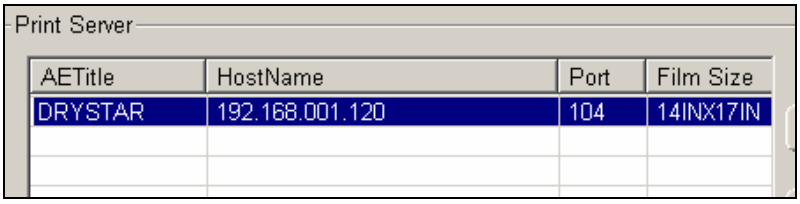


4. To change the print layout format, click on the … button and drag the arrow to your desired layout.



5. Click **Print Preview** to view the selected layout.

6. Select the printer you have just installed in the Print Server box, and click **Print**.



Note: You also have the option of printing to a paper printer. To use a paper printer, click on the Paper tab in the Print window. You must have all the proper drivers installed on your computer.

Chapter Four
Appendix

Tool Bar Icons

File Management

Open Work List

Close Image

Arrow (Default Mouse pointer) **[Esc]**

Display Management

Single Image

Two Image Display - Horizontal

Two Image Display – Vertical

Four Image Display- 2 by 2

Display Original

Display All Original

Image Management

Window Level **[Shift + W]**

Window Level All

Flip Horizontal

Flip Vertical

Rotate CW

Rotate CCW

Zoom In/Out **[Shift + Z]**

Magnifying Glass **[Shift + G]**

Measure **[Shift + M]**

Angle

Inverse

Pan [Shift + P]

Print Management

Printer Launch

More Icons

DICOM Header View

View Pixel Value