

2013

MEDLINK IMAGING, LLC

MEDLINK CR SOFTWARE MANUAL

2013 Edition

MEDLINK CR SOFTWARE

Medlink Imaging introduces the latest innovation software in today's digital market. The Medlink CR software is the new acquisition program built with many features and functions provided by medical users in the digital field. The acquisition software's design makes it simpler for users to navigate, acquire images, reprocess images, and view images. While the Medlink CR program was meant for simplicity, it also provides powerful tools for your medical and chiropractic practice.



Medlink CR Software

Here are some features of the Medlink CR Acquisition software. **Standard Features:**

- Easily reprocess images before accepting or sending to PACS
- Import and Export Images from other DICOM sources/Export to JPEG
- DICOM Print
- CD/DVD Archiving with Viewer
- Reprocess Images before accepting or sending it out to you PACS Systems
- Security features with permissions for Doctors and Technicians
- Freedom to build your information on:
 - Study Descriptions
 - Referring Physician
 - Department
 - Body Part
 - Institution Name
 - Reading Physician
 - Facility

Optional Features:

- Chiropractic Tools
- Image Stitching
- Modality Worklist



Medlink CR Chiropractic Tools

Here are the tools that come with the Medlink CR Chiropractic Package:

- Atlas Orthogonal Analysis
- Gonstead Measurements
- Upper Cervical Analysis
- George's Lines
- Ilium Analysis
- Line Drawing
- Measuring
- Angles (Regular, Cobb)
- Cervical Curve
- Lumbar Curve

Available only for the Medlink CR Chiropractic Package



Medlink CR Veterinary Software

Here are the tools that come with the Medlink CR Veterinary Package:

- Animal Image Algorithms
- Works with Conventional or High Frequency X-Ray Equipment
- Easy to use acquisition software
- Advance Vet Viewer

SET-UP DETAILS and REQUIREMENTS

Medlink Pre-staging Information

- Medlink CR Installation Survey
- Pre-staging will be done by a Medlink Tech
- Software Licensing performed at pre-staging

Computer System Requirements For Remote Viewing

- Microsoft Windows XP Professional with SP3/Vista/7 (x32 or x64) with Internet Explorer (8 or higher)
- CPU 2.5 GHz or higher
- 2GB of memory or higher
- 160 GB hard drive space or higher
- DVD/CD Burner
- 19 inch monitor or higher

MEDLINK CR LOGIN SCREEN



MEDLINK CR LOGGING SCREEN

1. You can activate the MEDLINK CR software by:
 - a. Double clicking the icon on your desktop to open the Medlink CR software
2. Login Instructions:
 - a. Dealer will have an admin login and password provided by the Medlink Tech.
 - b. A user login and password will be generated by the dealer upon request
 - c. Once the user logs in he/she will have the opportunity to change their own password
3. The dealer will also be responsible for generating new accounts and permissions, during the installation

MEDLINK CR WORK LIST

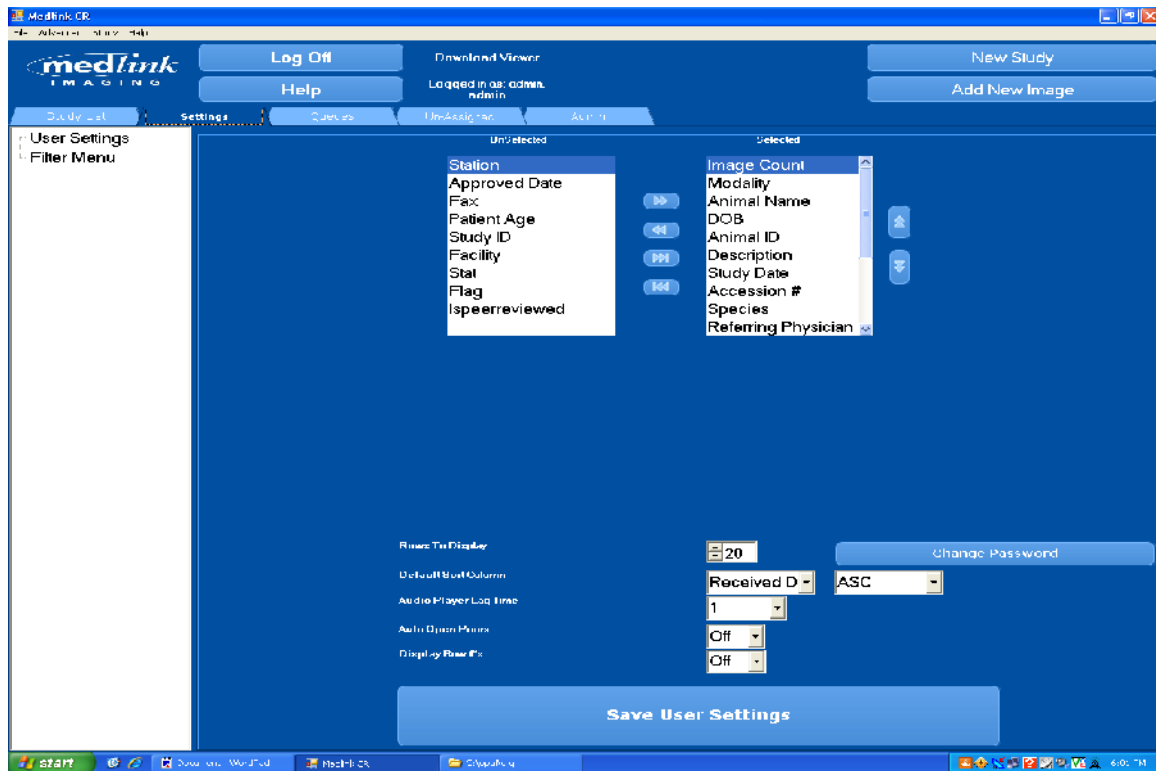


MEDLINK CR WORK LIST

The Medlink CR work list is the main page for the following:

- **Log Off:** This will logoff the operator: *Operator will need to click on the "Log Off" button to exit the program*
- **New Study:** This will add a new study for scanning information
- **Help:** This is the help section for the software.
- **Add New Image:** This will add more images to the current patient on the work list
- **Study List Tab:** This keeps all the patient information
- **Settings Tab:** This will allow users to change the tags information on the new patient entry screen
- **Queues Tab:** This tab shows three queues DICOM, Transfer Logs and Printer queues
- **Un-Assigned:** Corrects conflicts in imported studies (is rarely if ever used)
- **Admin Tab:** Allows anyone logged in as an admin to add users, printers, generate database totals, etc
- **Open:** Opens any study on the work list
- **Import CD:** Imports DICOM images from other sources to the computer (CD, DVD, hard disk, USB)
- **Refresh:** Refreshes the work list
- **CD Burn:** This option will allow users with permission to burn studies to CD, DVD, hard disk with a lite viewer
- **Import JPG:** User can import any JPG image and tag it to a study
- **All:** Displays all the studies in the worklist (deletes a filtered field)
- **Unread:** Shows all unread studies on the work list
- **DICOM Print:** Prints a study with a DICOM printer (can also be done from viewer)
- **Full Scan:** Will refresh the studylist every 2 minutes (for incoming studies from other sources or if remote)

MEDLINK CR SETTINGS TAB



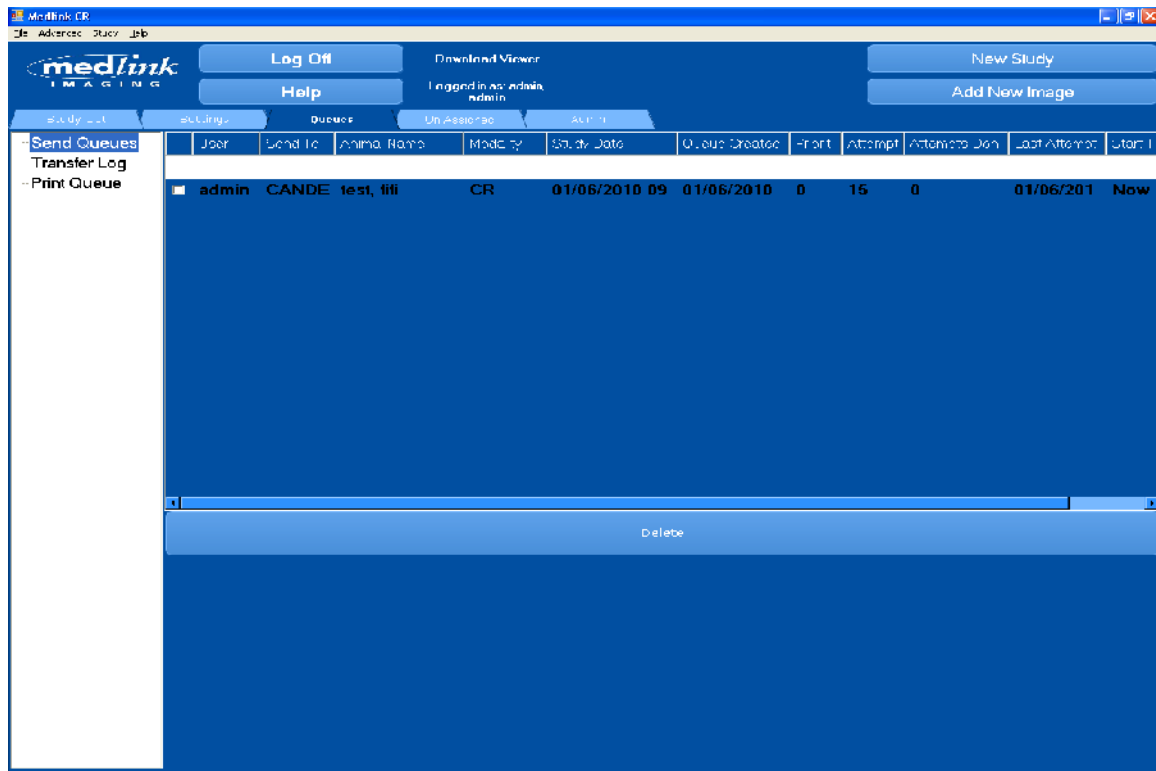
MEDLINK CR SETTINGS TAB

This will allow users to change the tags information on the new patient entry screen

A tech can also make the following changes:

- Change Password:
- Rows To Display: 20 works best on a 19inch monitor
- Default Sort Column: Usually set to Study Date/Desc
- Audio Player Lag Time: Not used
- Auto Open Priors: Open patients priors in the viewer
- Display Row #'s:

MEDLINK CR QUEUES TAB



MEDLINK CR QUEUES TAB

A user can check the following queues for successful transmissions or if errors occurred on transmissions:

MEDLINK CR Queues

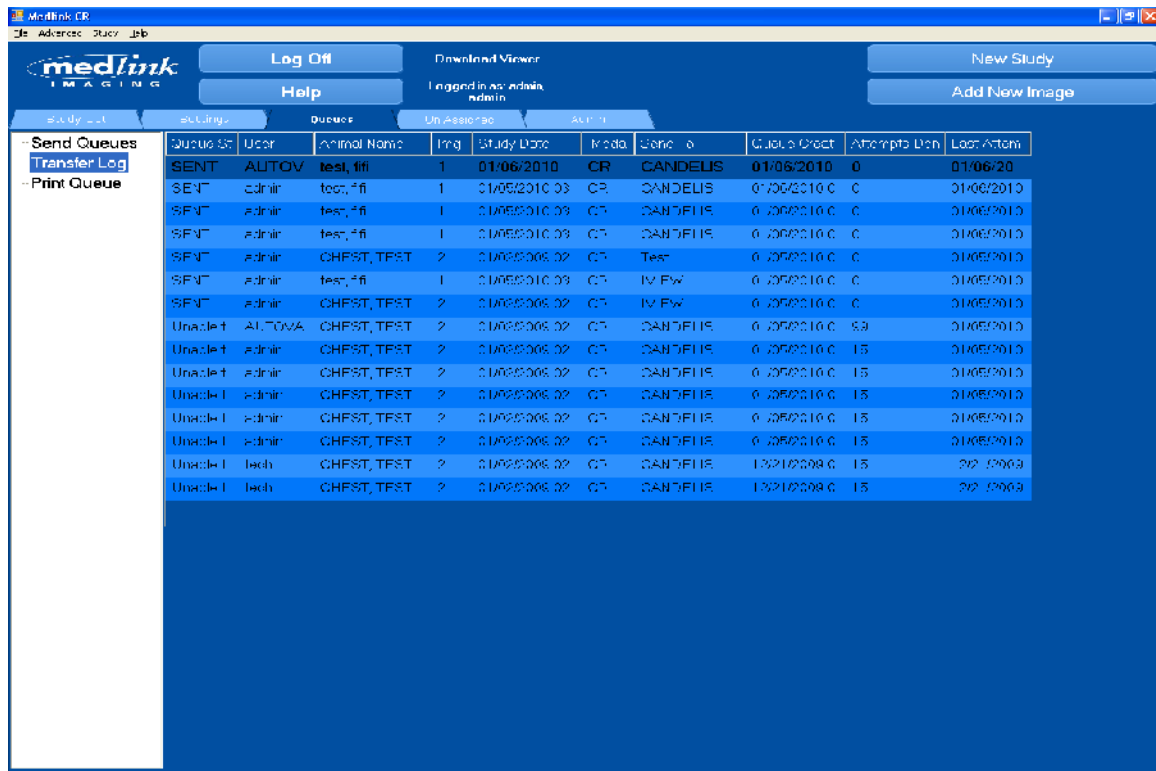
- SEND QUEUES: This monitors all images being sent to a PACS system

Note:

- If the images are sent successfully then the user should not see any queues
- If the user notices an error item then make sure the admin checks the DICOM information for the PACS system for configuration errors
- Errors can occur if there are network issues*

*Use Wintail.exe to open c:\opal\bin\opalrouter.txt for details on error

MEDLINK CR TRANSFER LOG



The screenshot shows the MedLink CR Transfer Log window. The window has a menu bar with 'File', 'Address', 'Study', and 'Job'. Below the menu bar is a toolbar with buttons for 'Log Off', 'Download Viewer', 'New Study', 'Help', 'Add New Image', and 'Print Queue'. The main area displays a table of transfer logs. The table has columns for Queue St, User, Animal Name, Img, Study Date, Mode, Send to, Queue Count, Attempts Used, and Last Attempt. The table contains 15 rows of data, including entries for 'test', 'test', 'test', 'test', 'test', 'test', 'test', 'test', 'test', 'test', 'test', 'test', 'test', 'test', and 'test'.

Queue St	User	Animal Name	Img	Study Date	Mode	Send to	Queue Count	Attempts Used	Last Attempt
SENT	AUTOV	test, fff	1	01/06/2010	CR	CANDELIS	01/06/2010	0	01/06/2010
SENT	admin	test, fff	1	01/06/2010	CR	CANDELIS	01/06/2010	0	01/06/2010
SENT	admin	test, fff	1	01/06/2010	CR	CANDELIS	01/06/2010	0	01/06/2010
SENT	admin	test, fff	1	01/06/2010	CR	CANDELIS	01/06/2010	0	01/06/2010
SENT	admin	CHEST, TEST	2	01/06/2010	CR	Test	01/06/2010	0	01/06/2010
SENT	admin	test, fff	1	01/06/2010	CR	IV PW	01/06/2010	0	01/06/2010
SENT	admin	CHEST, TEST	2	01/06/2010	CR	IV PW	01/06/2010	0	01/06/2010
Unack'd	ALTOVA	CHEST, TEST	2	01/06/2010	CR	CANDELIS	01/06/2010	53	01/06/2010
Unack'd	admin	CHEST, TEST	2	01/06/2010	CR	CANDELIS	01/06/2010	15	01/06/2010
Unack'd	admin	CHEST, TEST	2	01/06/2010	CR	CANDELIS	01/06/2010	15	01/06/2010
Unack'd	admin	CHEST, TEST	2	01/06/2010	CR	CANDELIS	01/06/2010	15	01/06/2010
Unack'd	admin	CHEST, TEST	2	01/06/2010	CR	CANDELIS	01/06/2010	15	01/06/2010
Unack'd	admin	CHEST, TEST	2	01/06/2010	CR	CANDELIS	01/06/2010	15	01/06/2010
Unack'd	tech	CHEST, TEST	2	01/06/2010	CR	CANDELIS	12/21/2009	15	02/09/2009
Unack'd	tech	CHEST, TEST	2	01/06/2010	CR	CANDELIS	12/21/2009	15	02/09/2009

MEDLINK CR TRANSFER LOG TAB

A user can check the following queues for errors or transmissions:

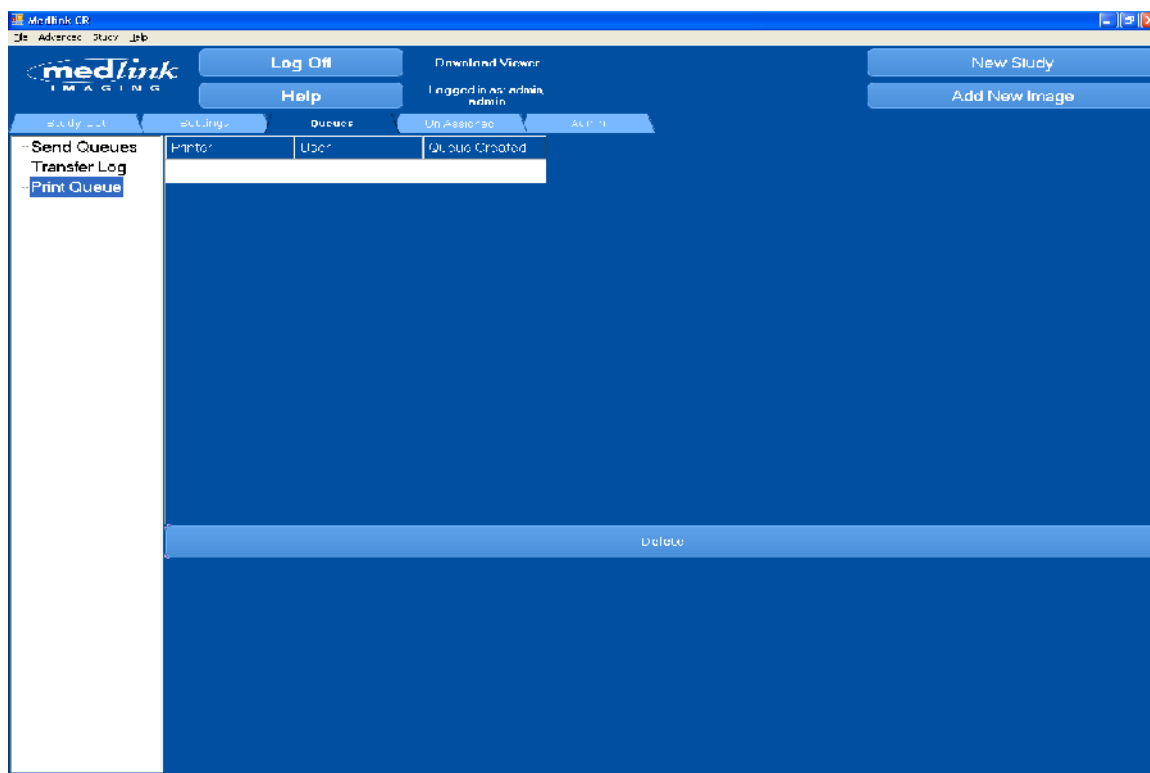
MEDLINK CR Queues

- **TRANSFER LOG:** This keeps a log of all images acquired by the program and sent to a PACS or other remote systems

Note:

- User can check monitor all images transfer by looking at a log

MEDLINK CR PRINTER QUEUES



MEDLINK CR PRINTER QUEUES

A user can check the following queues for errors in transmissions to a printer:

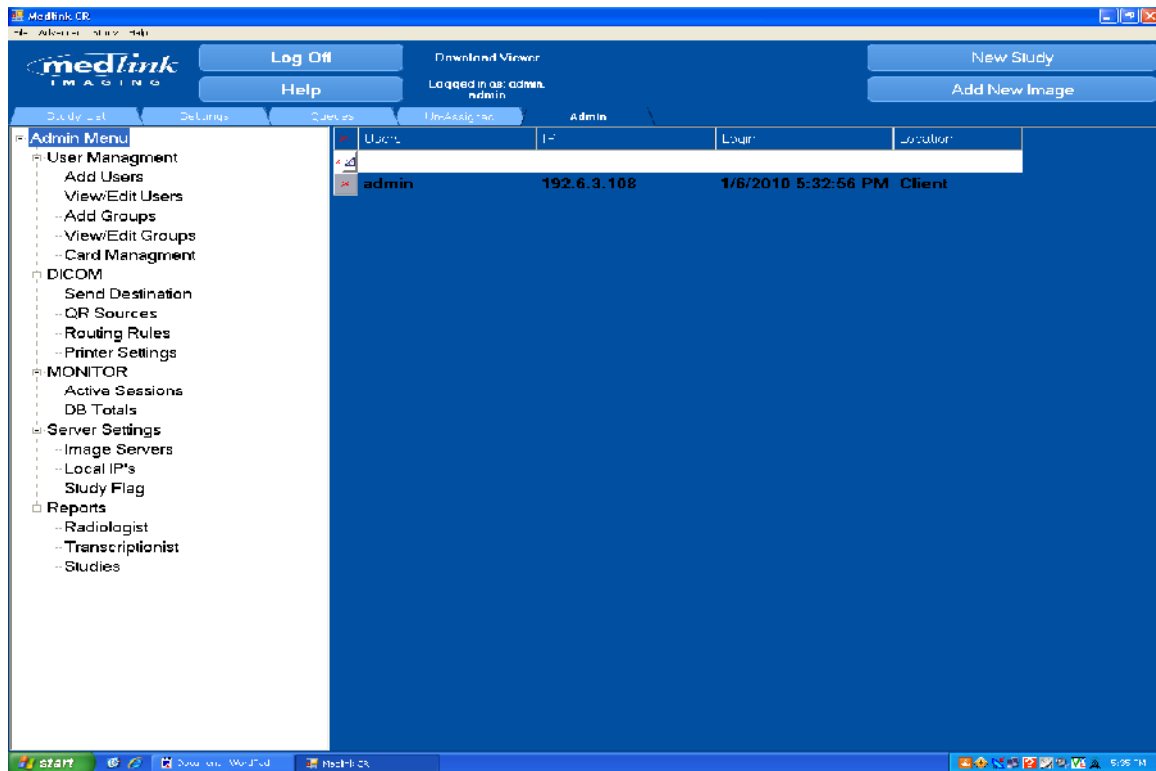
MEDLINK CR Queues

- Print Queues: monitors all images being sent to the DICOM Printer

Note:

- If the images is sent successfully then the user should not see any queues
- If the user notices an error item then make sure the admin checks the DICOM information for the DICOM printer system for configuration errors
- Errors can occur if there are network issues

MEDLINK CR ADMIN MENU



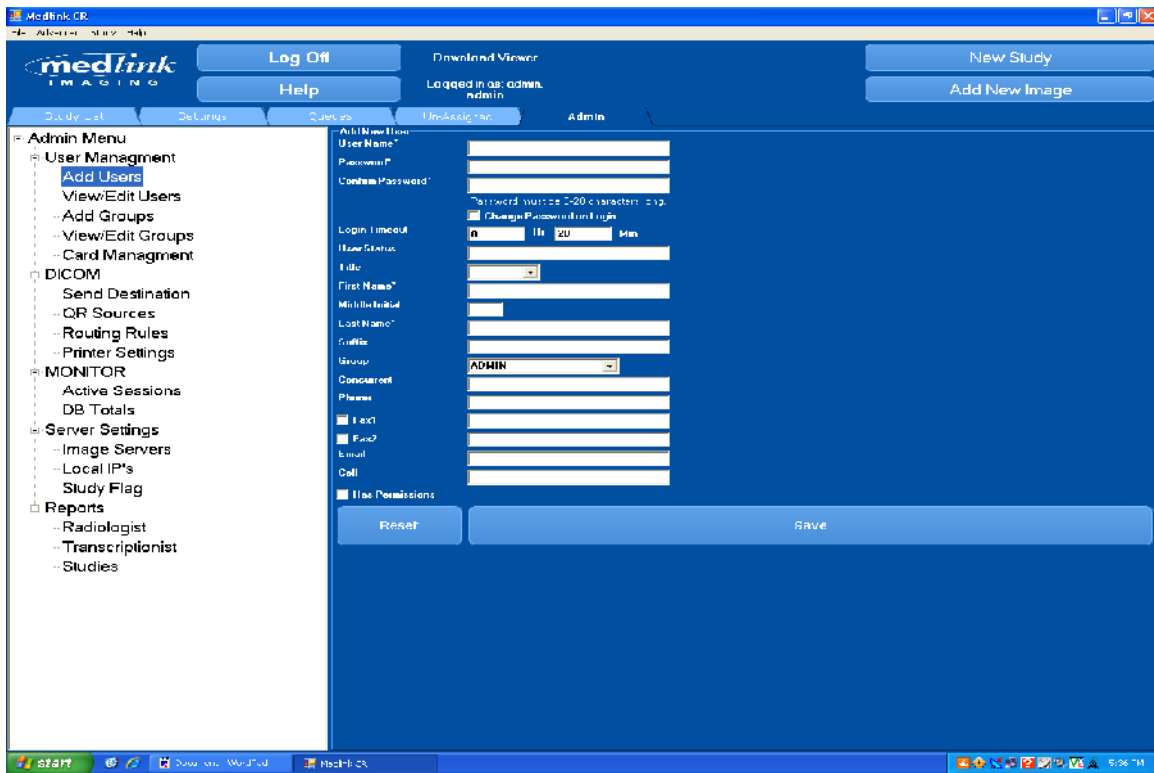
MEDLINK CR ADMIN MENU

Admin Menu can be only access by user with admin permissions

The Admin has access to:

- CHANGE SOFTWARE SETTINGS
- USER MANAGEMENT
- SEND DESTINATIONS/ROUTING RULES
- MONITOR
- SERVER SETTINGS
- REPORT

MEDLINK CR ADD USERS



MEDLINK CR ADD USERS:

Dealer with Admin permission can add users:

- **User Name*:**
- **Password*:**
- **Confirm Password*:**
 - **Change Password on Login**
- **Login Timeout:**
- **User Status:**
- **Title:**
- **First Name*:**
- **Middle Initial:**
- **Last Name*:**
- **Suffix:**
- **Group:**
- **Concurrent:**
- **Phone:**
- **Fax1:**
- **Fax2:**
- **Email:**
- **Cell:**
- **Has Permissions:**

MEDLINK CR VIEW/EDIT USERS

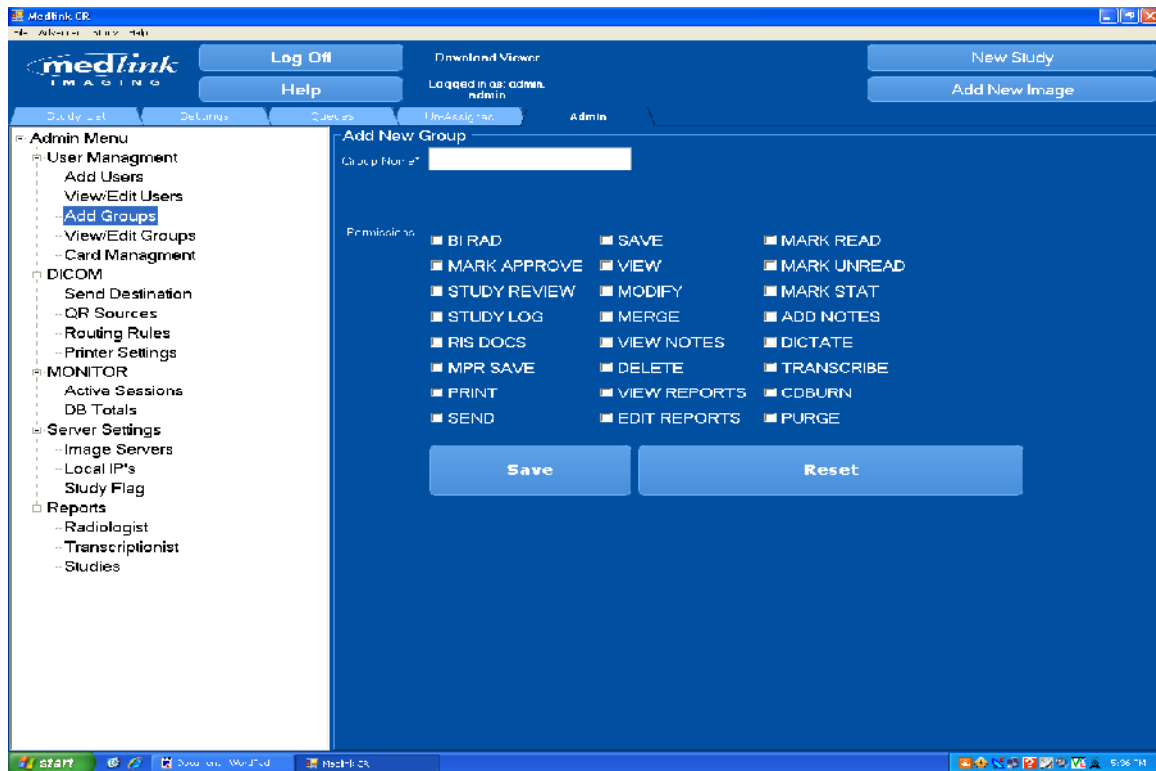


MEDLINK CR VIEW/EDIT USERS

User with admin permission can access this section and has the option to change

- User Name:
- User Information:
- Password:
- Groups:
- Permissions:

MEDLINK CR ADD GROUPS

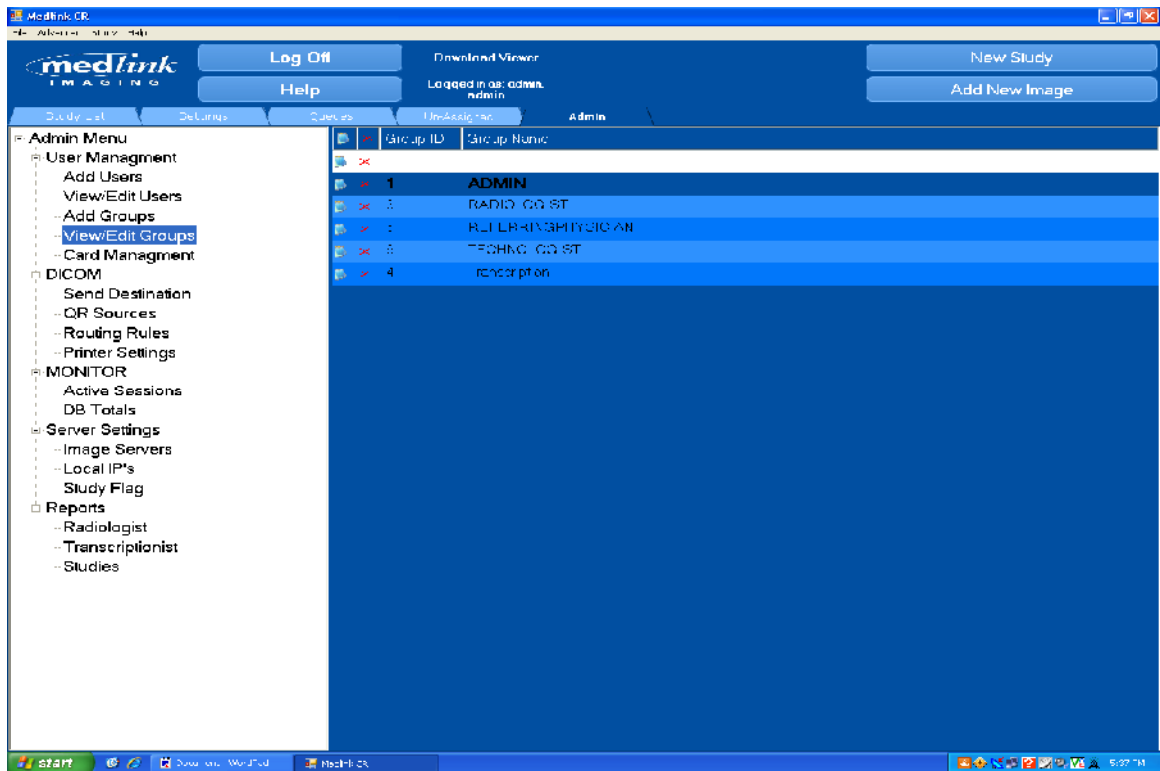


MEDLINK CR ADD GROUPS

User with admin permission can access this section and has the option to change

- Add Groups
- Set Permissions

MEDLINK CR VIEW/EDIT GROUPS

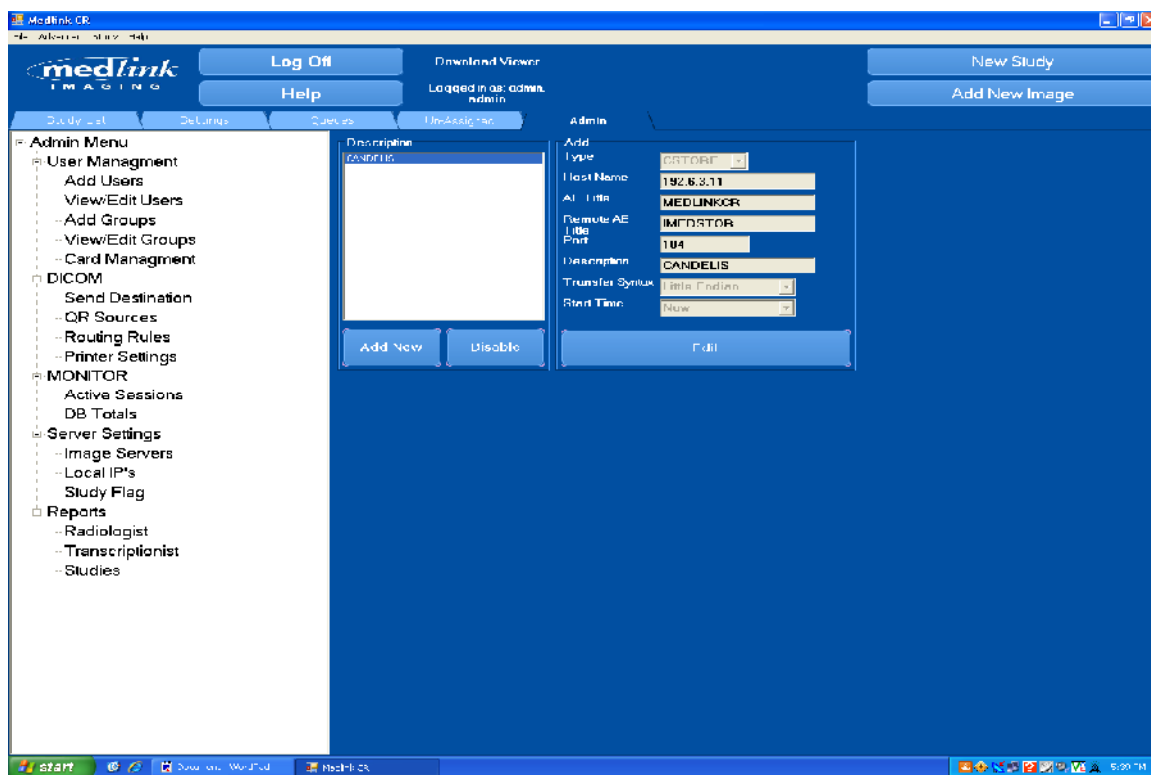


MEDLINK CR VIEW/EDIT GROUPS

User with admin permission can access this section and has the option to change

- View Groups
- Edit Groups
- Delete Groups

MEDLINK CR SEND DESTINATION



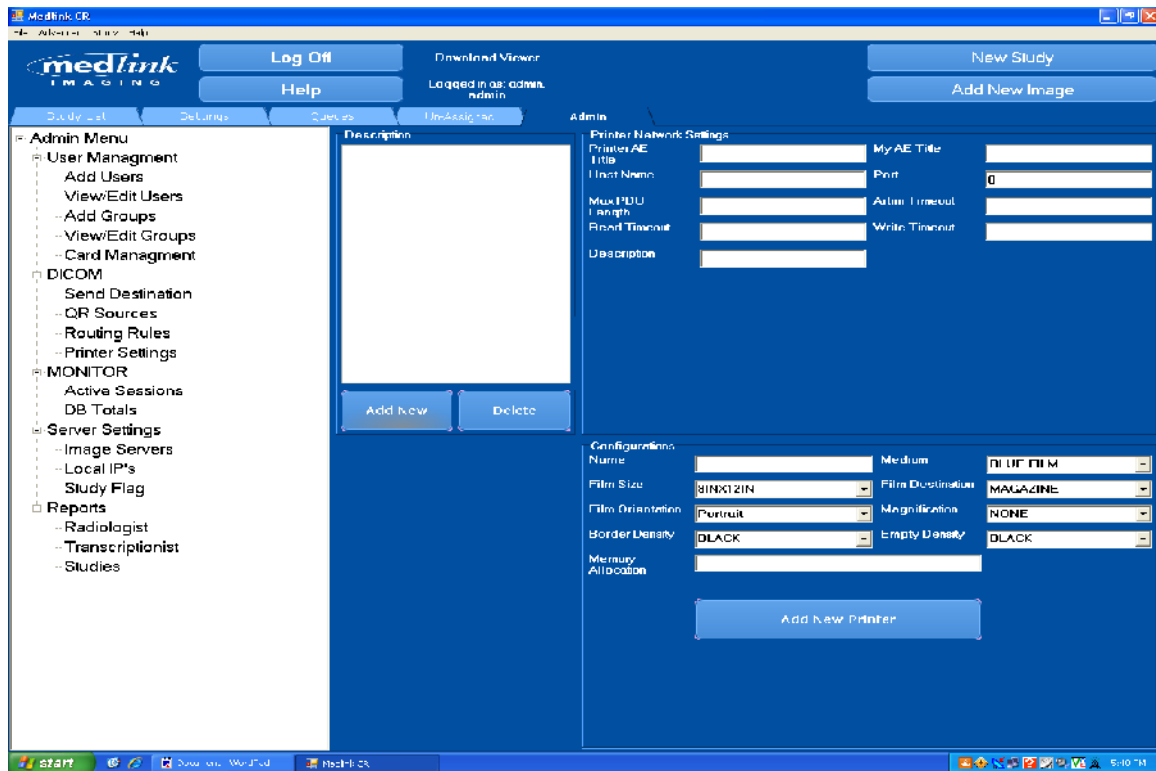
MEDLINK CR SEND DESTINATION

Medlink tech will configure any PACS destinations, during pre-staging, if information is on the installation survey.

If customer obtains a PACS system with the CR system, then the following information needs to be configured in the Send Destination with data received on the CR Installation Survey.

- **TYPE:** Select CSTORE for foreign PACS
- **HOST NAME:** IP Address of PACS Server
- **AE TITLE:** This will be set to MEDLINKCR by default
- **REMOTE AE TITLE:** AE Title of the server
- **PORT:** Port Number (MEDLINK CR Port Number is 104)
- **DESCRIPTION:** Name of Server
- **TRANSFER SYNTAX:** Compression type: *LITTLE ENDIAN, JPEG LOSSLESS, AND JPEG 2000*
- **START TIME:** This will be set by a Medlink Tech

MEDLINK CR PRINTER SETTINGS



MEDLINK CR PRINTER SETTINGS

User with Admin permission will be able to install a DICOM printer:

If customer obtains a DICOM printer, then the following information needs to be input in the printer settings

CLICK ADD:

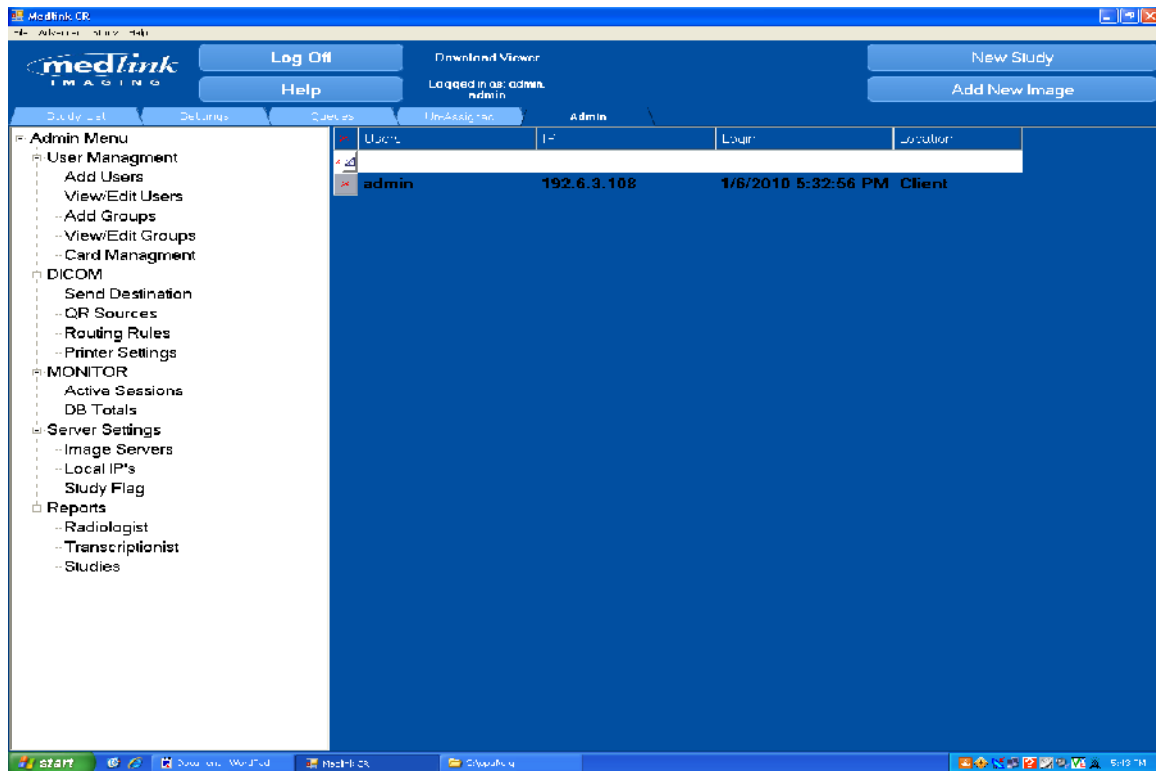
PRINTER NETWORK SETTINGS:

- PRINTER AE TITLE:
- MY AE TITLE:
- HOST NAME:
- PORT:
- MAX PDU LENGTH:
- ARTIM TIMEOUT:
- READ TIMEOUT:
- WRITE TIMEOUT:
- DESCRIPTION:

CONFIGURATIONS:

- NAME:
- MEDIUM:
- FILM SIZE:
- FILM DESTINATION:
- FILM ORIENTATION:
- MAGNIFICATION:
- BORDER DENSITY:
- EMPTY DENSITY:
- MEMORY ALLOCATION:

MEDLINK CR ACTIVE SESSIONS



MEDLINK CR ACTIVE SESSIONS

User with admin permission has access to this page and can see any users that have active sessions

An admin can see all active permission:

A user needs to logoff the software by clicking the logoff button from the work list menu

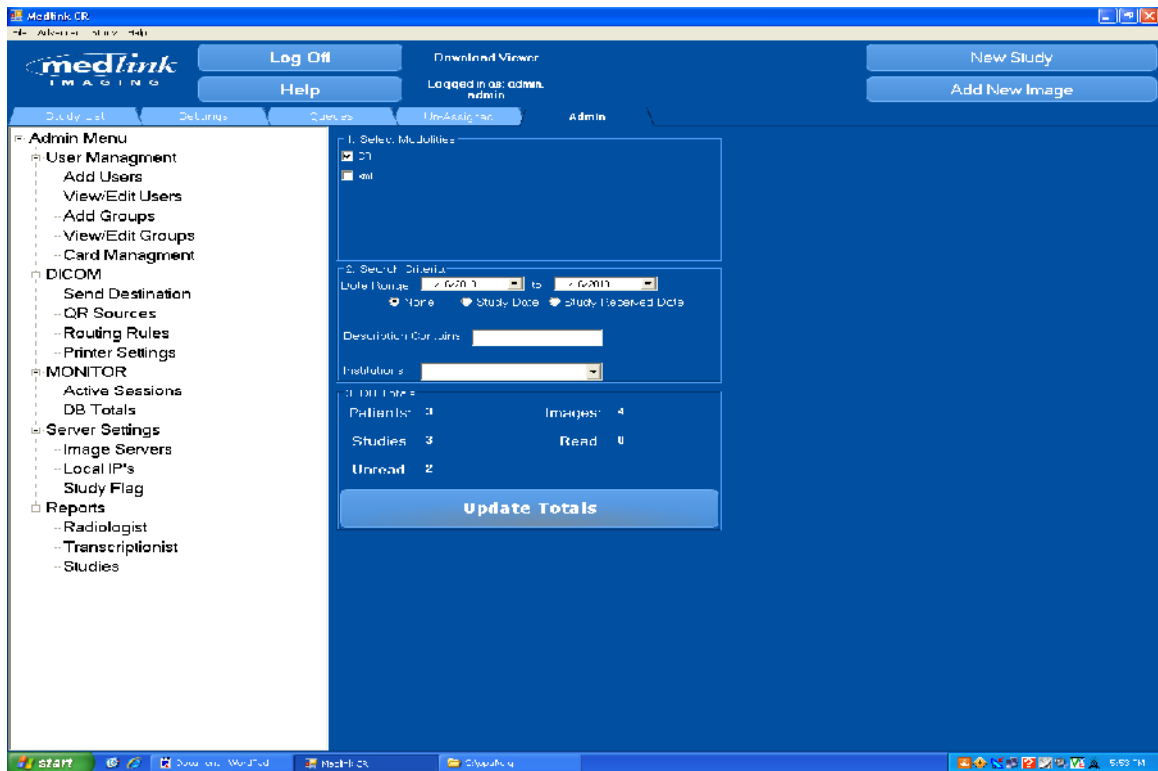
Note:

If a user just exits the program without logging off, their account will remain active

This means the user cannot log back into the program unless an admin user terminates the session on the computer

To terminate a session, just click on the red X and remember to notify user to use the logoff button on the work list page.

MEDLINK CR DB TOTALS



MEDLINK CR DB TOTALS

User with admin permission has access to this page and can obtain database information

The admin can obtain database information by selecting:

- Select Modalities
- Search Criteria
 - o Date Range
 - None
 - Study Date
 - Study Received
- Description Contains
- Institutions
- DB Totals
 - o Patients
 - o Images
 - o Studies
 - o Read
 - o Unread

MEDLINK CR MEDICAL NEW STUDY

The screenshot shows the 'Add New Study' window in the MedLink CR Medical software. The window has a blue header with the MedLink logo and navigation buttons like 'Log On', 'Download Viewer', 'Help', 'Logged in as admin', and 'Add New Study'. Below the header is a table with columns: 'Study List', 'Settings', 'Queues', 'Un-Assigned', and 'Admin'. The table has rows for 'Imaging', 'MO', 'Patient Name', 'DOB', 'Patient ID', 'Study Description', 'Study Date/Time', 'Accession', 'Body Part', and 'Referring'. The 'Add New Study' form is open, showing fields for Patient ID, Patient Name, Last Name, Gender (Male, Female, Unknown), DOB, Accession, Study ID, Study Date/Time, Modality (CR), Study Description, Body Part, Reading Physician, Referring Physician, Institution Name, Facility, and Department. There are 'ADD' buttons next to the dropdown menus. At the bottom of the form are 'CANCEL' and 'Acquire' buttons. The Windows taskbar at the bottom shows the start button, several open applications, and the system clock at 8:43 AM on 02/15/2010.

MEDLINK CR NEW STUDY

A user can start a new study by clicking on the NEW STUDY button on the work list main page

User inputs the following information:

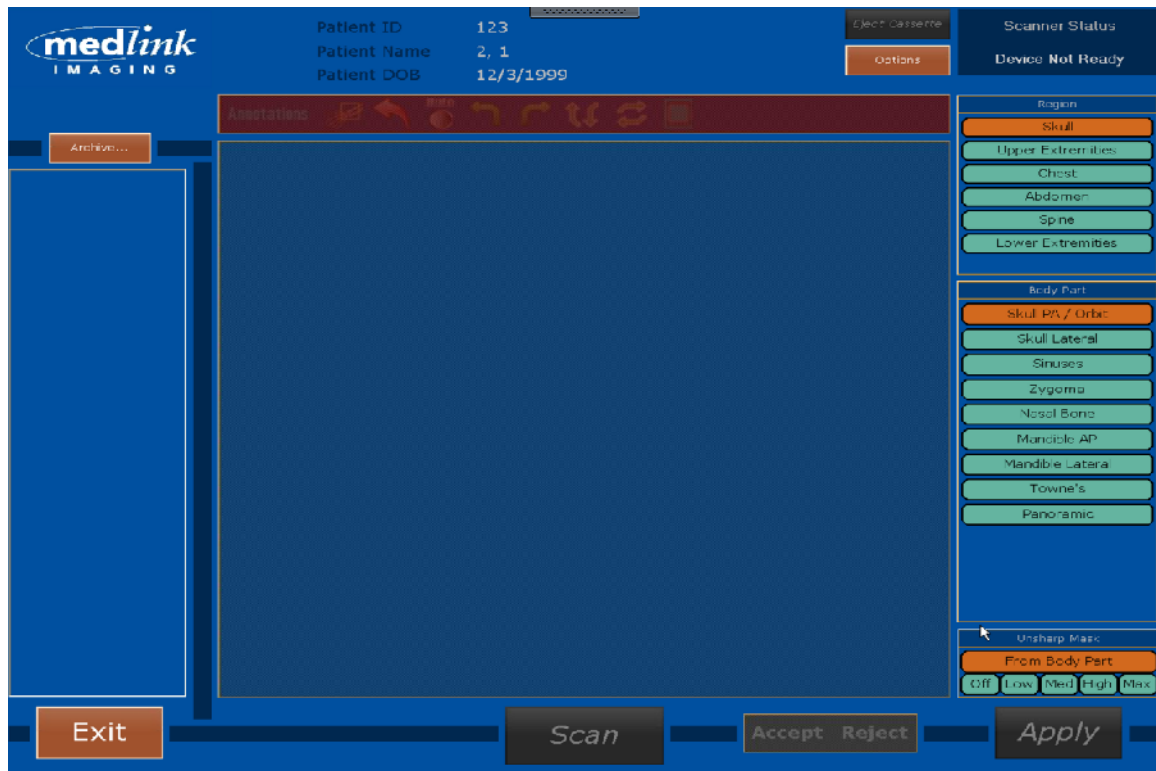
PATIENT'S INFORMATION:

- PATIENT ID*:
- PATIENT NAME*:
- LAST NAME*:
- MI:
- SUFFIX:
- GENDER:
- DOB*:
- ACCESSION NUMBER:
- STUDY ID:
- STUDY DATE/TIME*:
- MODALITY*:
- NOTES:
- CLINICAL HISTORY:
- CANCEL
- ACQUIRE

THE FOLLOWING INFORMATION NEEDS TO BE INSERTED THE INFORMATION WILL BUILD A DROP DOWN LIST THIS INFORMATION CAN BE USE FOR NEW PATIENT

- STUDY DESCRIPTION:
- BODY PART:
- READING PHYSICIAN:
- REFERRING PHYSICIAN :
- INSTITUTION NAME:
- FACILITY:
- DEPARTMENT:

MEDLINK CR MEDICAL ACQUISITION SCREEN



MEDLINK CR ACQUISITION SCREEN

Once the user inputs all the new study information and click acquire this screen will appear

Note:

The Medlink CR will flash a blinking red, once the user is in the acquisition screen the light will turn into a solid green.

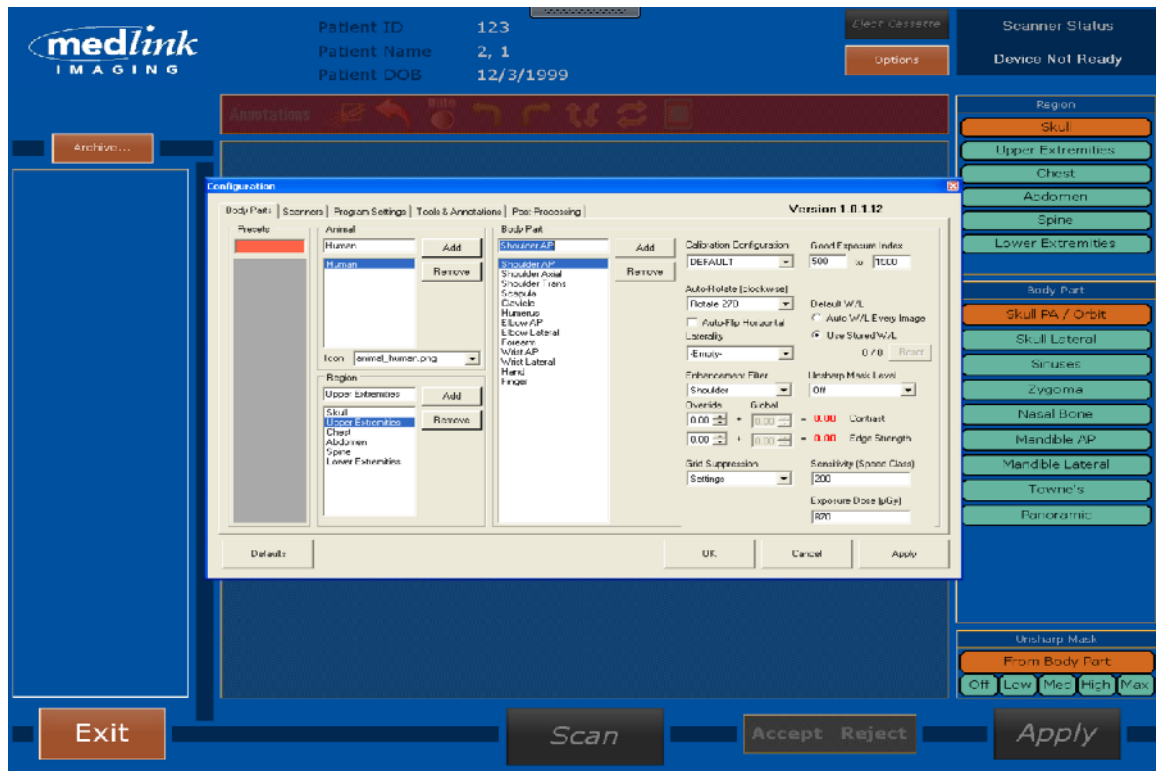
Blinking Red Light: The CR is pending for acquisition information

Solid Green: The user is in the acquisition screen and ready for scanning

Blink Green Light: The CR is scanning the plate

Solid Red: A message will show up on the screen and at this time please contact your dealer for technical support

MEDLINK CR SCANNER OPTIONS



MEDLINK CR SCANNER OPTIONS

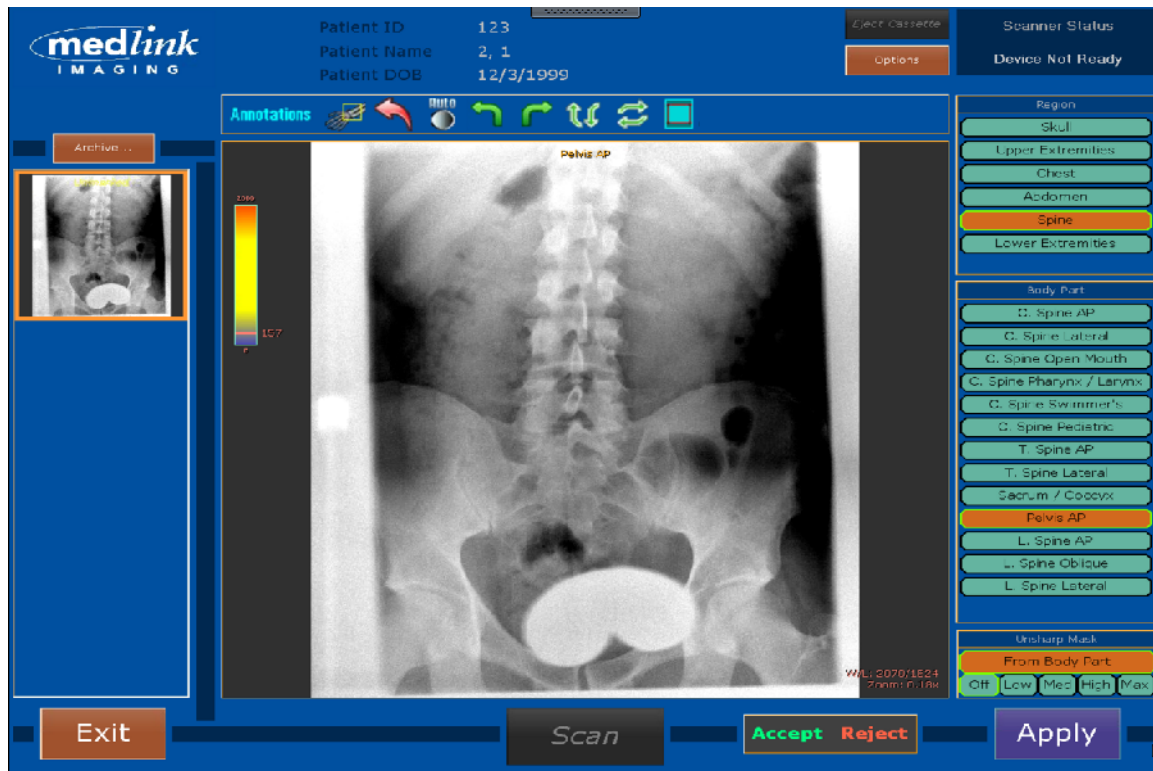
The scanner options are for advance users.

The scanner options give the dealers an opportunity for image improvement

Note:

This will be discuss in class in more details

MEDLINK CR ACQUIRING IMAGES



MEDLINK CR ACQUIRING IMAGES

Once the user inputs all the new study information and click acquire this screen will appear

ACQUIRING IMAGES:

- SELECT REGION
- SELECT BODY PARTS
- CLICK SCAN

NOTES:

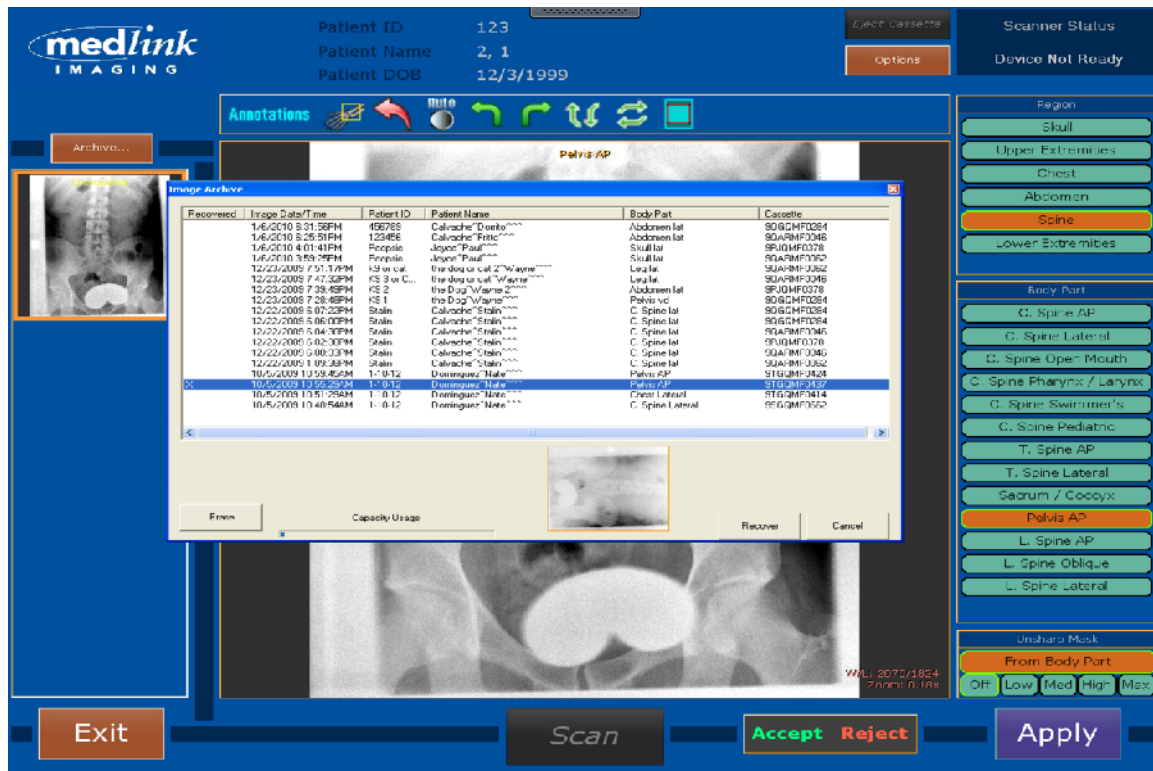
- When an image is scanned do not accept right away unless the images is acceptable
- Image enhancements can be process before accepting the images
- After enhancing the image quality click on accept
- All raw data images are saved in the archive folder

To improve image quality, a tech can select another body part and use that image algorithm to improve the quality

All rejected images are also stored in the archive

All current images can be reprocessed, with another image algorithm to improve quality

MEDLINK CR IMAGE ARCHIVE



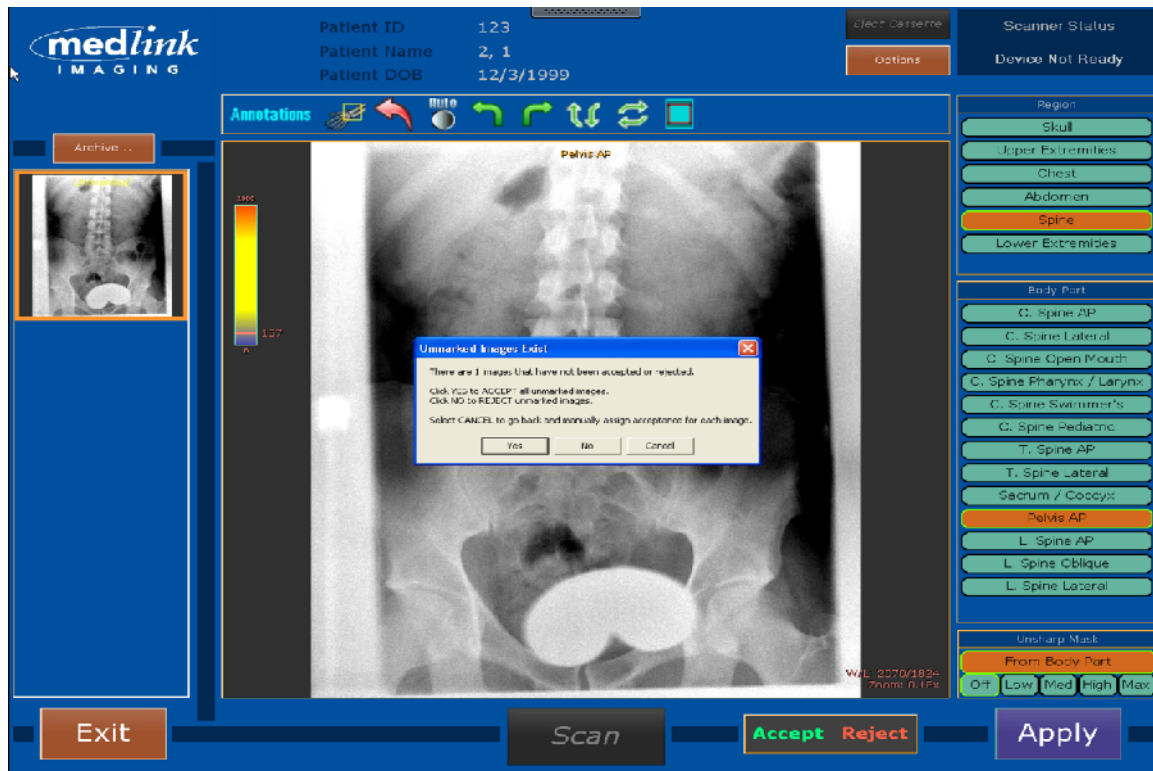
MEDLINK CR IMAGE ARCHIVE

The user can use the image archive to reprocess an image for better quality

IMAGE ARCHIVE:

- Click on Archive
- Select the image
- Use the acquisition screen to enhance the images and make any corrections
- Process the image using another body part image algorithm

MEDLINK CR EXITING ACQUISITION SCREEN



MEDLINK CR EXITING ACQUISITION SCREEN

After the user made any change on the images, they can exit by clicking the exit button

Exiting will prompt the user with the following information only if they did not Accept or Reject an image:

- Click YES to ACCEPT all unmarked images
- Click NO to REJECT unmarked images
- Select CANCEL to go back and manually assign acceptance for each images.
- Once you made your choice, the windows will close and take you to the Work List windows
- Remember to exit the program the user must use the LOGOFF BUTTON.

MEDLINK CR VETERINARY NEW STUDY

The screenshot shows the 'Add New Study' window in the MedLink CR Veterinary software. The window has a blue header with the MedLink logo and navigation buttons like 'Log On', 'Download Viewer', 'Help', and 'New Study'. Below the header is a table with columns for 'Study List', 'Delinque', 'Queues', 'Un-Assign', and 'Acquire'. The main form area contains several input fields and dropdown menus. The 'Patient Information' section includes fields for 'Animal ID', 'Animal Name', 'Owner Last Name', 'MI', 'Suffix', 'Gender' (with radio buttons for Male, Female, Unknown), and 'DOB'. The 'Accession and Study Information' section includes 'Accession', 'Study ID', 'Study Date/Time' (with a date and time picker), and 'Modality' (with a dropdown menu). The 'Facility Information' section includes 'Queue Description', 'Species', 'Reading Physician', 'Referring Physician', 'Institution Name', 'Facility', and 'Department'. There are also buttons for 'CANCEL' and 'Acquire' at the bottom of the form. The window title bar shows 'MedLink CR' and the system tray at the bottom shows the Windows taskbar with various icons and the time '4:00 PM'.

MEDLINK CR NEW STUDY

A user can start a new study by clicking on the NEW STUDY button on the work list main page

User inputs the following information:

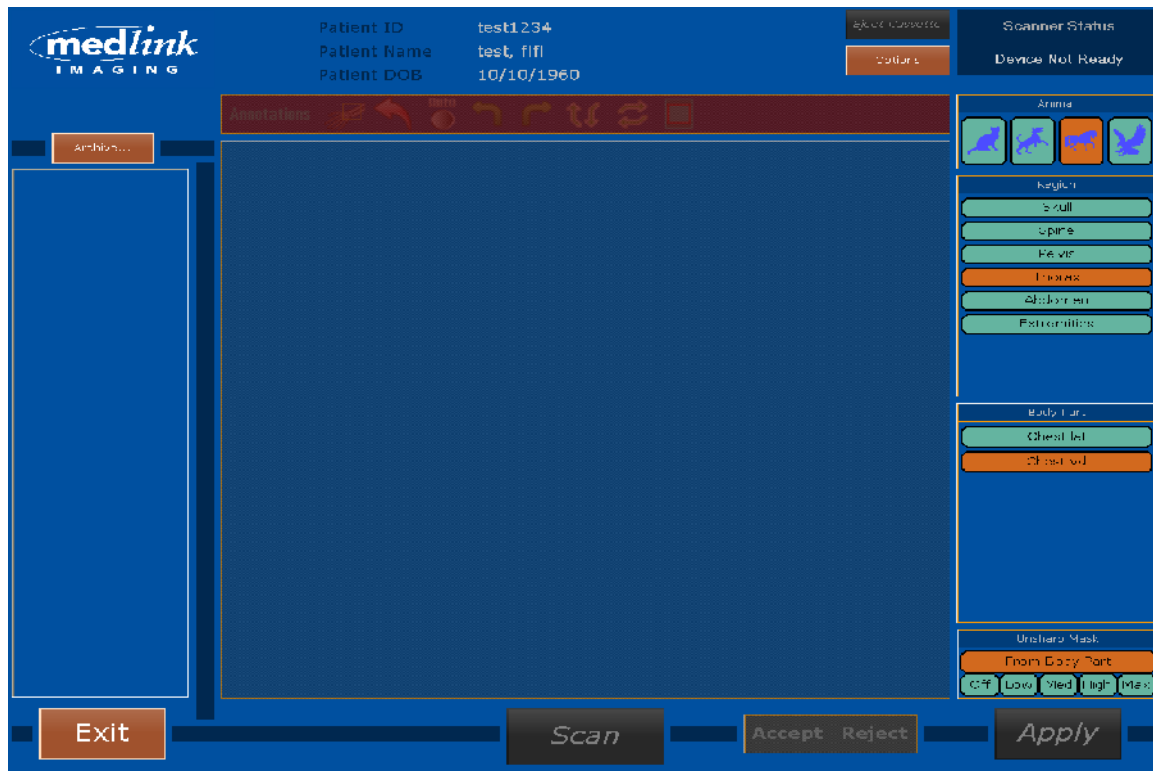
PATIENT'S INFORMATION:

- ANIMAL ID*:
- ANIMAL NAME*:
- OWNER LAST NAME*:
- MI:
- SUFFIX:
- GENDER:
- DOB*:
- ACCESSION NUMBER:
- STUDY ID:
- STUDY DATE/TIME*:
- MODALITY*:
- NOTES:
- CLINICAL HISTORY:
- CANCEL
- ACQUIRE

THE FOLLOWING INFORMATION NEEDS TO BE INSERTED THE INFORMATION WILL BUILD A DROP DOWN LIST THIS INFORMATION CAN BE USE FOR NEW PATIENT

- STUDY DESCRIPTION:
- SPECIES:
- READING PHYSICIAN:
- REFERRING PHYSICIAN :
- INSTITUTION NAME:
- FACILITY:
- DEPARTMENT:

MEDLINK CR VET ACQUISITION SCREEN



MEDLINK CR ACQUISITION SCREEN

Once the user inputs all the new study information and click acquire this screen will appear

Note:

The Medlink CR will flash a blinking red, once the user is in the acquisition screen the light will turn into a solid green.

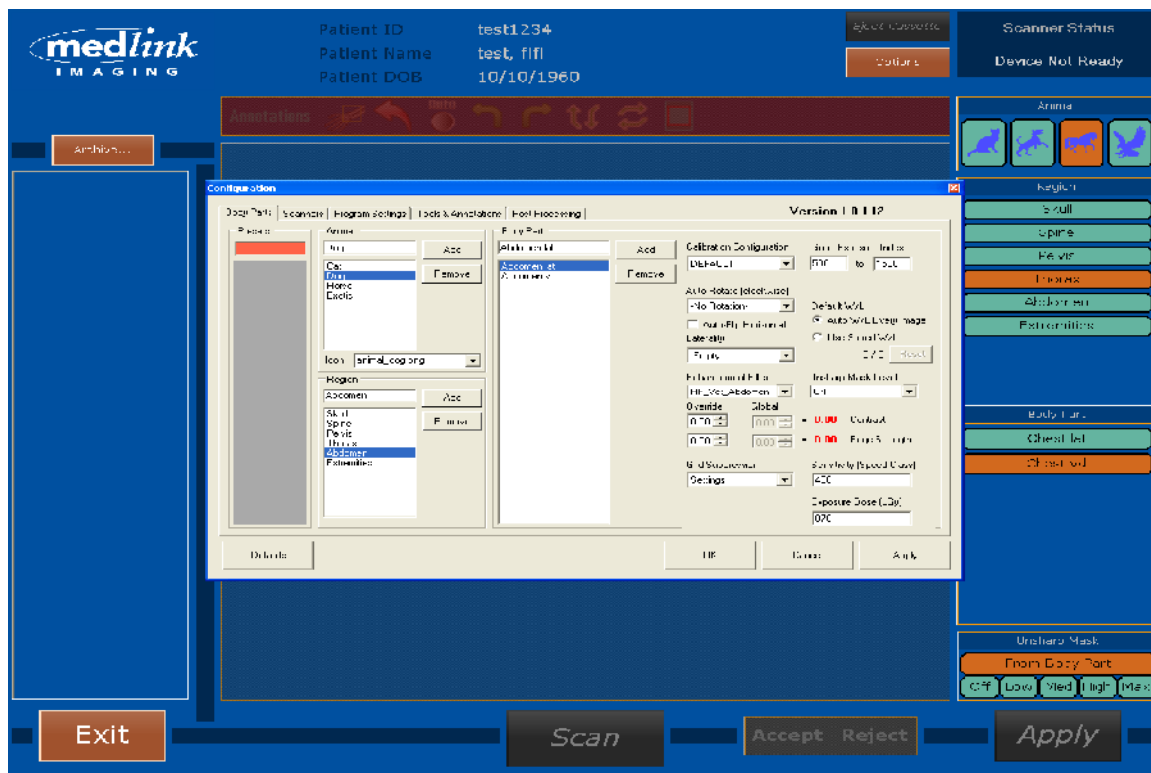
Blinking Red Light: The CR is pending for acquisition information

Solid Green: The user is in the acquisition screen and ready for scanning

Blink Green Light: The CR is scanning the plate

Solid Red: A message will show up on the screen and at this time please contact your dealer for technical support

MEDLINK CR SCANNER OPTIONS



MEDLINK CR SCANNER OPTIONS

The scanner options are for advance users.

The scanner options give the dealers an opportunity for image improvement

Note:

This will be discuss in class in more details

MEDLINK CR ACQUIRING IMAGES



MEDLINK CR ACQUIRING IMAGES

Once the user inputs all the new study information and click acquire this screen will appear

ACQUIRING IMAGES:

- SELECT SPECIES
- SELECT REGION
- SELECT BODY PARTS
- CLICK SCAN

NOTES:

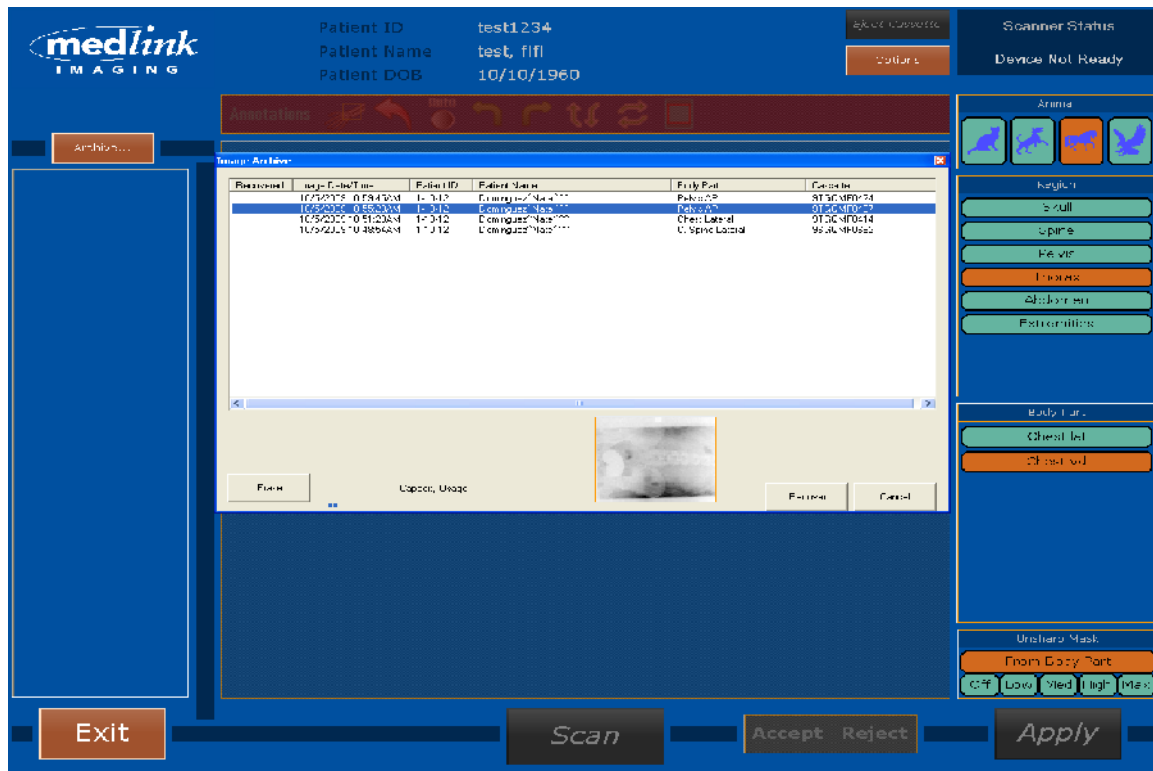
- When an image is scanned do not accept right away unless the images is acceptable
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- After enhancing the image quality click on accept
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All current images can be reprocessed, with another image algorithm to improve quality

MEDLINK CR IMAGE ARCHIVE



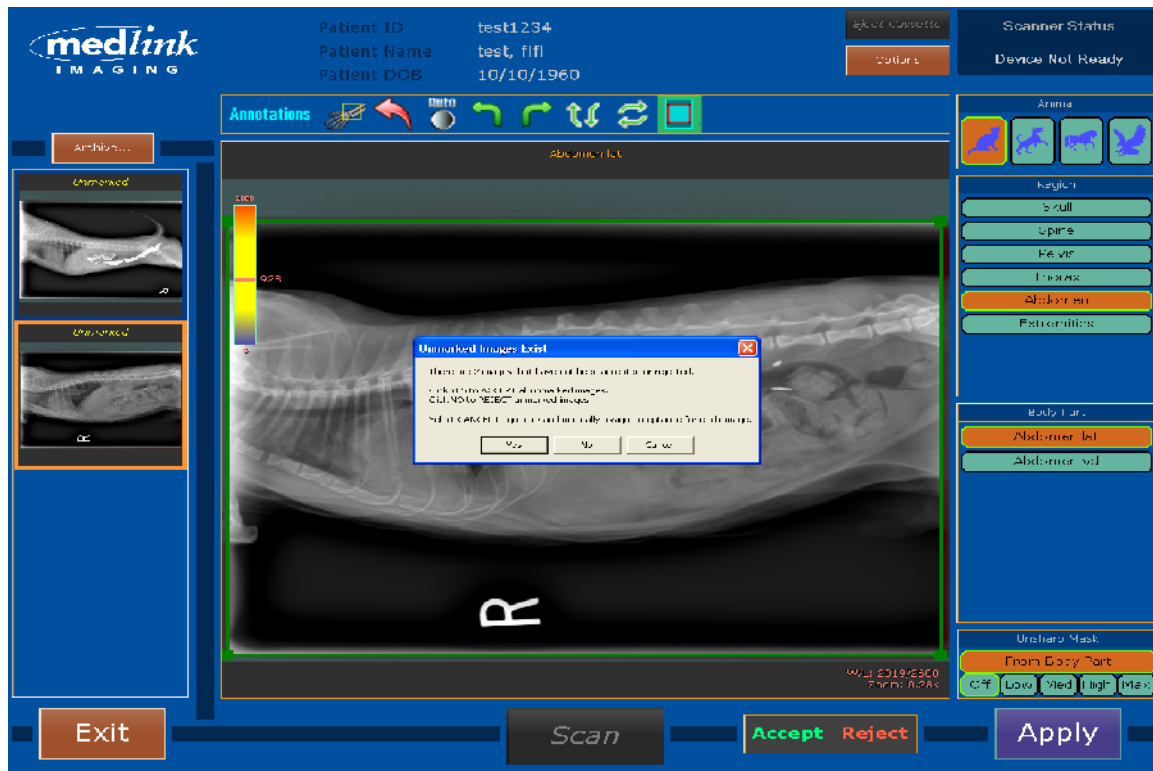
MEDLINK CR IMAGE ARCHIVE

The user can use the image archive to reprocess an image for better quality

IMAGE ARCHIVE:

- Click on Archive
- Select the image
- Use the acquisition screen to enhance the images and make any corrections
- Process the image using another body part image algorithm

MEDLINK CR EXITING ACQUISITION SCREEN



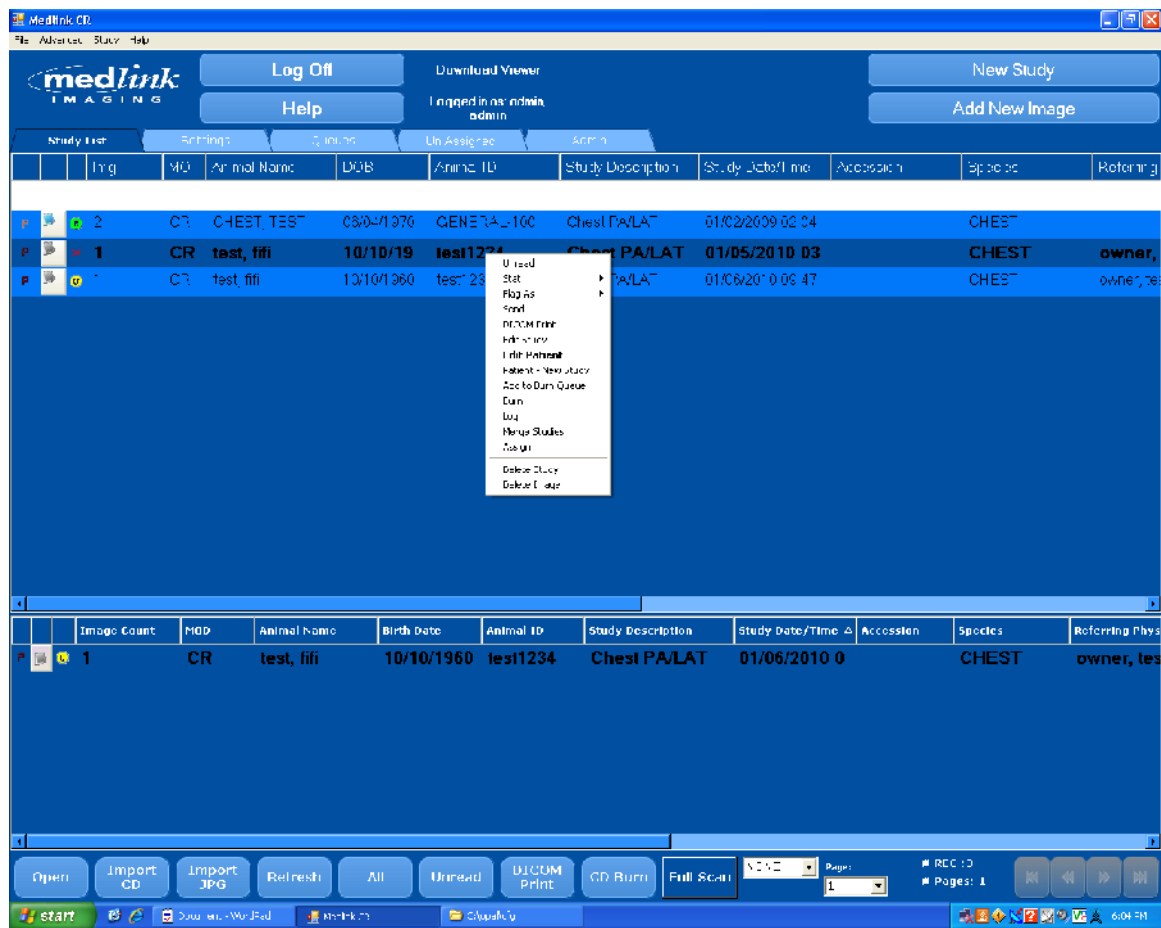
MEDLINK CR EXITING ACQUISITION SCREEN

After the user made any change on the images, they can exit by clicking the exit button

Exiting will prompt the user with the following information only if they did not Accept or Reject an image:

- Click YES to ACCEPT all unmarked images
- Click NO to REJECT unmarked images
- Select CANCEL to go back and manually assign acceptance for each images.
- Once you made your choice, the windows will close and take you to the Work List windows
- Remember to exit the program the user must use the LOGOFF BUTTON.

MEDLINK CR WORK LIST RIGHT CLICK

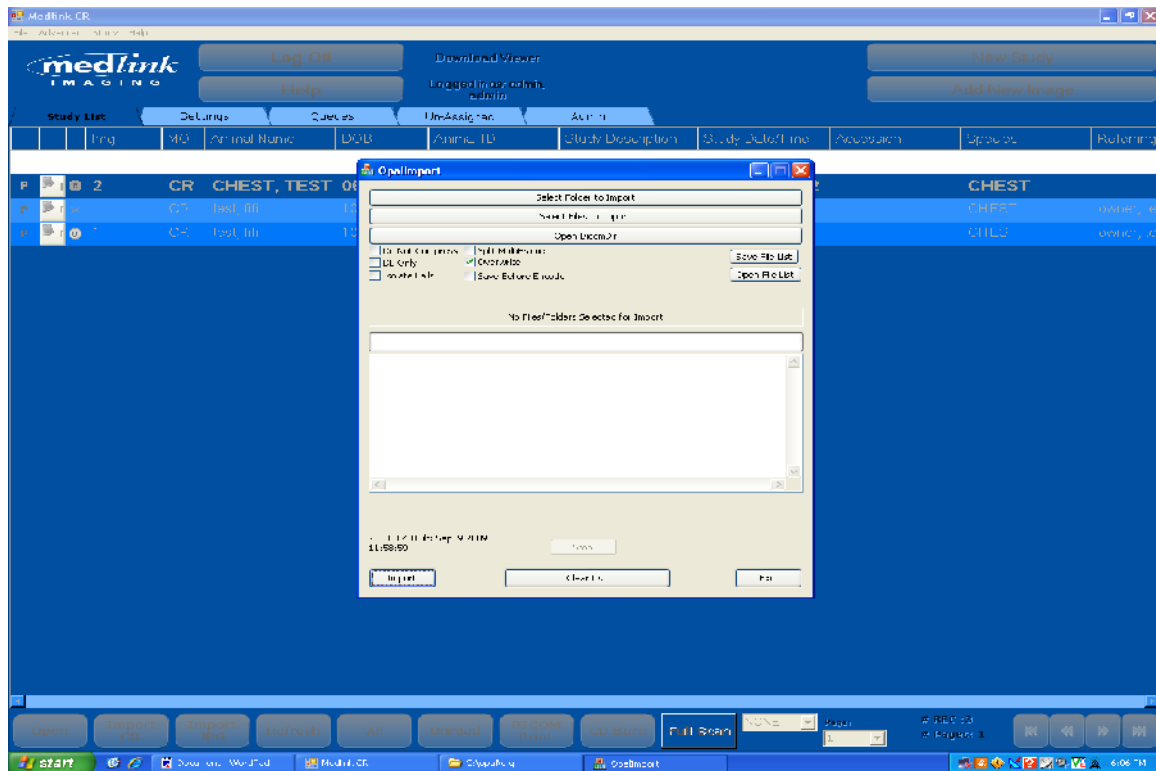


MEDLINK CR WORK LIST RIGHT CLICK

RIGHT CLICK FUNCTIONS:

- Unread:
- Stat:
- Flag As:
- Send:
- DICOM Print:
- Edit Study:
- Edit Patient:
- Patient – New Study:
- Add to Burn Queues:
- Burn:
- Log:
- Merge Studies:
- Assign:
- Delete Study:
- Delete Image:

MEDLINK CR IMPORT CD



MEDLINK CR IMPORT CD

A user can import any Standard DICOM images from several sources

User has the options to:

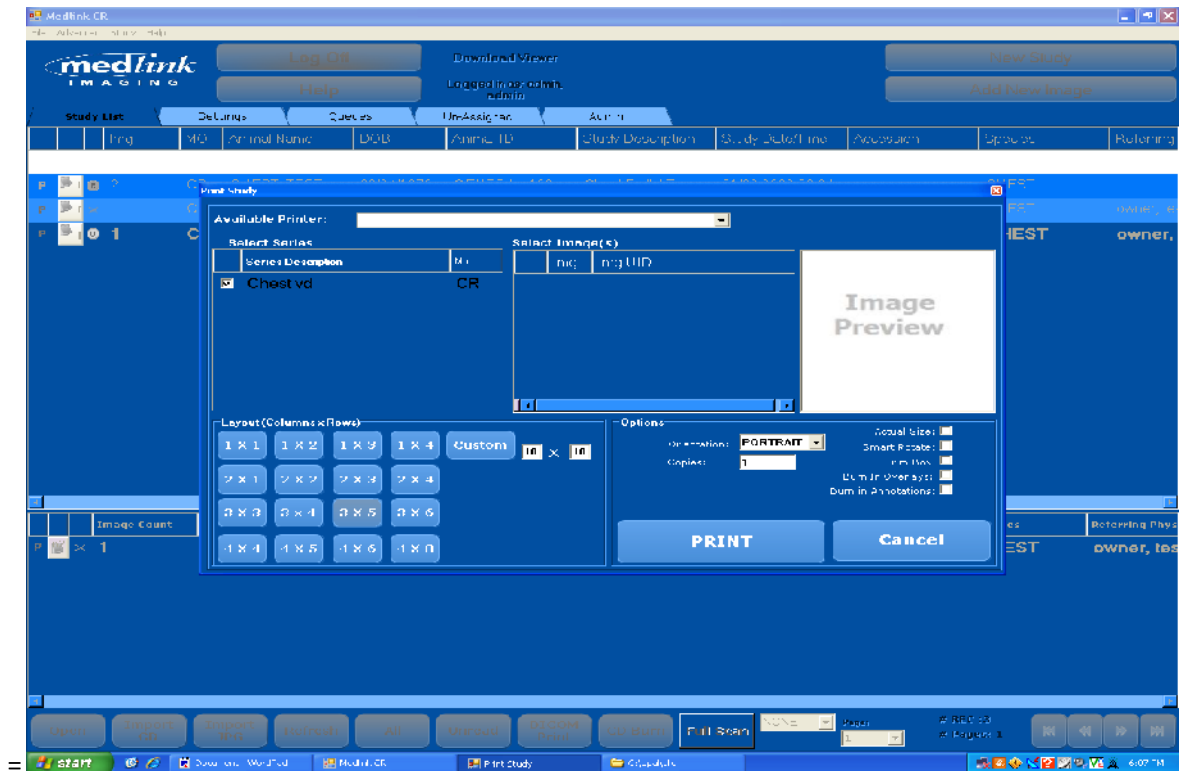
- Select Folder to Import
- Select Files to Import
- Open DICOM Directory

User Options:

- Do Not Compress
- Spilt Multi-Frame
- DB Only
- Overwrite
- Isolate Fails
- Save Before Encodes

Once the DICOM files are selected, click on import to transfer the images

MEDLINK CR DICOM PRINT



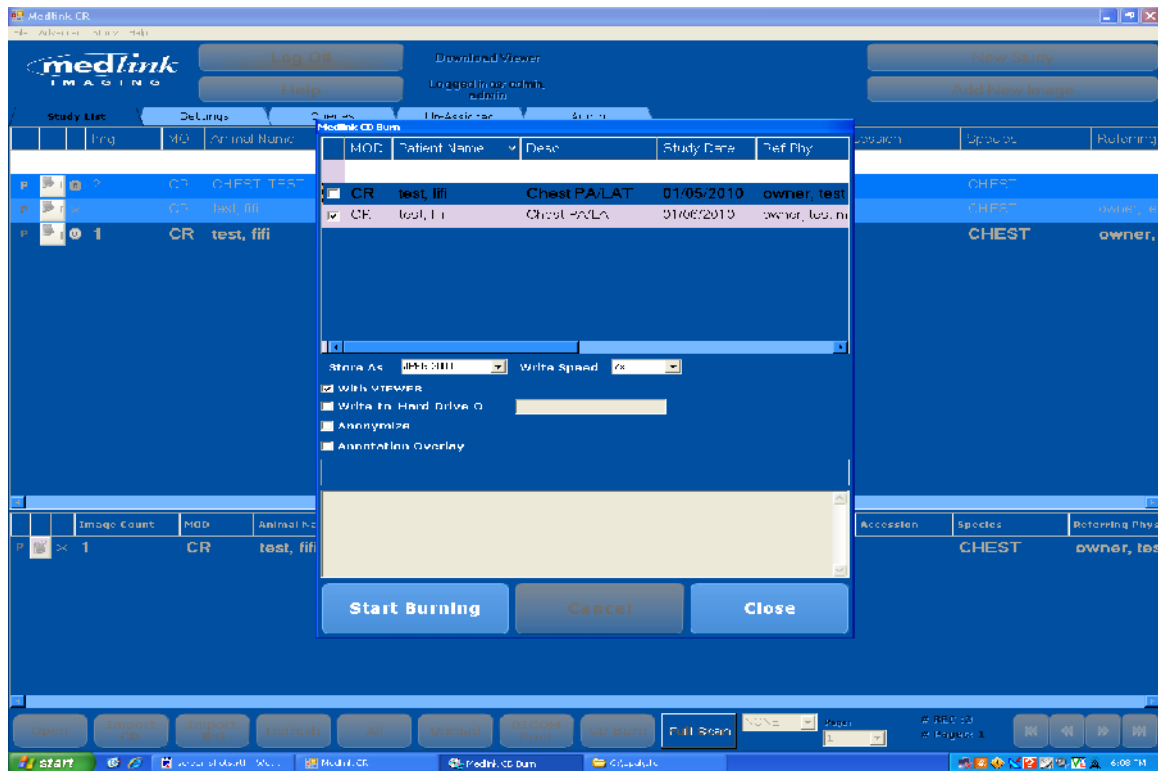
MEDLINK CR DICOM PRINT

A user can print any images to a configured DICOM Printer

Selections:

- Available Printer:
- Select Series:
- Select Image(s):
- Layout (Columns x Rows)
- Options:
 - o Orientation:
 - o Copies:
 - o Actual Sizes:
 - o Smart Rotate:
 - o Trim Box:
 - o Burn In Overlays:
 - o Burn In Annotations:
- Print
- Cancel

MEDLINK CR BURN CD



MEDLINK CR BURN CD

A user can burn patient images to CDs and DVDs with or without an image viewer.

User can burn images to CDs and DVDs

- Select the image(s) that is going to be archive
- Screen will popup showing the images selected with the options to burn any priors
- Check on the image and any priors
- Select compress type in the Store As option
- Select Write Speed
- Check Viewer to burn a viewer onto the media
- Write to Hard Drive Option (USB FLASH DRIVE)
- Anonymize option for anonymous patient
- Annotation Overlay Options
- Start Burning
- Cancel
- Close

MEDLINK CR LIST OF RULES

1. If you are experiencing a problem, please call your dealer. If you need further assistance then please call Medlink Imaging, LLC at 800-456-7800.
2. All software is preloaded and no one should be uninstalling any software on the computer.
3. Do not install any additional software, if additional software is installed and is the cause of any Medlink CR software problem, it will become a billable call of \$250.00 per hour to fix the issue.
4. Please do not force in or force out any cassettes when scanning.
5. Please use two hands when inserting and removing a cassette.
6. Make sure to let the MEDLINK CR warm up at least one minute before using. It is recommended to turn it off at the end of the day with the back switch and not from any other power device.
7. Do not install any programs or use the computer for personal gain. Since the software is preloaded, any other programs or viruses will corrupt the software. Please **do not** surf the web with this machine.
8. Do not unplug the MEDLINK CR or computer without properly shutting down. By doing so this will corrupt the software on the computer.
9. Please keep the scanner away from any energy source such as: x-ray equipment, microwave, and radio. These interferences will result in bad image quality on the image.
10. Please do not attempt to handle any problems, please call a certified technician to diagnose the issues. It is recommended to keep a list of contacts in case of emergency.

Thank You