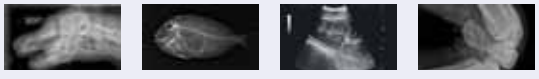
RapidStart™
User Manual

sound-eklin™



RapidStart™ User Guide

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Copyright Notice

This guide has been produced to assist in providing instructions for the Sound-Eklin RapidStart™ product. Every effort has been made to make the information in this guide as accurate as possible. The authors of this guide shall have neither liability nor responsibility to any person or entity with respect to any loss or damages in connection with or arising from the information contained in this guide.

Trademarks

Please Note

1. This product is intended for **Veterinary use only** (not for Human use).
2. Roentgenography, image processing, reading of image, and storage of data must be performed in accordance with the law of the state/country where the product is being used.
3. The user is responsible for maintaining the privacy of image data.
4. The user is responsible for the use and maintenance of the product. We suggest that a member of the user's staff be designated as being in charge of maintenance so as to ensure that the product is kept in a safe and good condition. Also, veterinary medical products must be used only by a qualified person.
5. In no event will Sound-Eklin™ be liable for direct or indirect consequential damage arising out of the use of this product. Sound-Eklin™ will not be liable for loss of image data due to any reason.
6. Sound-Eklin™ reserves the right to change the specifications, configuration and appearance of the product without prior notice.
7. Do not make any changes or modifications to the equipment unless otherwise specified in the manual.
8. The products are not fault tolerant and are not designed, manufactured or intended for use or resale as on-line control equipment in hazardous environments requiring fail safe controls, such as in the operation of nuclear facilities, aircraft navigation or aircraft communication systems, air traffic control life support, or weapons systems ("high risk activities"). Sound-Eklin™, on behalf of itself and the manufacturers or suppliers of the products, specifically disclaims any express or implied warranty of fitness for such high risk activities. Buyer represents and warrants that it will not use, or knowingly directly or indirectly distribute or resell products for such high risk activities.

General Safety Information

Follow the safety instructions in this manual and all warnings and cautions printed on the warning labels. Ignoring such cautions and warnings while handling the product may result in injury or accident. Be sure to read and fully understand the manual before using this product.

Note: Digital Radiography exposes you to the same radiation as conventional radiography. Always practice radiation safety when using this product.

Keep this manual for further reference.

Regulatory

Do not make any changes or modifications to the equipment unless otherwise specified in the manual.

If such changes or modifications should be made, you could be required to stop operation of the equipment.

For EU Countries

This product has been classified under EN60825-1:1994 and conforms to the following classes:

CLASS 1 LASER PRODUCT

LASER KLASSE 1

APPAREIL A RAYONNEMENT LASER DE CLASSE 1

APPARECCHIO LASER DI CLASSE 1

PRODUCTO LASER DE CLASE 1

APARELHO A LASER DE CLASSE 1

This product conforms to EMC 89/336/EEC and medical directive 93/42/EEC.

For U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

For Canada

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Caution Signs

Warning

This indicates a potentially hazardous situation which, if not heeded, could result in death or serious injury to you or others.

Caution

This indicates hazardous situation which, if not heeded, may result, in minor or moderate injury to you or others, or may result in machine damage.

Note

This is used to emphasize essential information. Be sure to read this information to avoid incorrect operation.

Environment of Use and Storage

Do not use or store the instrument near any flammable chemicals such as alcohol, thinner, benzene, etc. If chemicals are spilled or evaporate, it may result in fire or electric shock through contact with electric parts inside the instruments. Also, some disinfectants are flammable. Be sure to take care when using them.

Connection

Do not connect the instrument with anything other than specified. Otherwise, it may result in damage to the unit.

Console

Be sure to turn OFF the power of each instrument before connecting or disconnecting the cables. Also, do not handle them with wet hands. Otherwise, you may get an electric shock that may result in death or serious injury.

Be sure to hold the plug or connector to disconnect the A/C power cables. If you pull the cable, the core wire may be damaged, resulting in fire or electric shock.

Caution Signs *(Continued)*

Do not cut or process the A/C power cables. Also, do not place anything heavy, including the instrument on it, step on it, pull it, bend it, or bundle it. Otherwise, the cable may be damaged, which may result in fire or electric shock.

Do not turn ON the system power when condensation is formed on the instrument. Otherwise, it may result in fire or electric shock.

Handling

Never disassemble or modify the product as it may result in fire or electric shock. Also, since the instrument incorporates parts that may cause electric shocks and other hazardous parts, touching them may cause death or serious injury.

Do not hit or drop the instrument. The instrument may be damaged if it receives a strong jolt, which may result in fire or electric shock if the instrument is used without it being repaired.

When Problem Occurs

Should any of the following occur, immediately turn OFF the power of each instrument, unplug the power cable for the AC outlet, and contact Sound-Eklin™. When there is smoke, odd smell or abnormal sound. When liquid has been spilled into the instrument or a metal object has entered through an opening.

Maintenance and Inspection

When the instrument has been dropped and it is damaged, the instrument must be repaired by a qualified engineer only. If it is not repaired properly, it may cause fire, electric shock, or accident.

For safety reasons, be sure to inspect the instrument before using it.

Conventions

The following conventions are used in this guide:

Text	
Bold	Specific button on the touch or computer screen.
Italics	Reference to repeated steps or actions.
“Bold”	Example user input information.
Underline	Used for notational emphasis.
<Ctrl>	Keystroke.
<Alt> + <F4>	Keystrokes typed simultaneously.
[Start] > [My Computer]	Windows operating system menu selections.
Figures	
Click box	Red oval. 
Highlight box	Red rectangle. 
Text entry	Blue rectangle. 

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Appendix D: eFilm™ Application (continued)

Chapter 1: Introduction to RapidStart™

Figure 1-1: RapidStart™ Components

Features

The RapidStart™ features a 17” LCD touch screen display for patient data entry, selection of views and image acquisition.

Chapter 2:
Start-up and Shut-down Procedures

Start-up

Ensure the power supply for the panel is powered on.

Start the RapidStart™ by depressing the ON-OFF button. The Main screen will display.

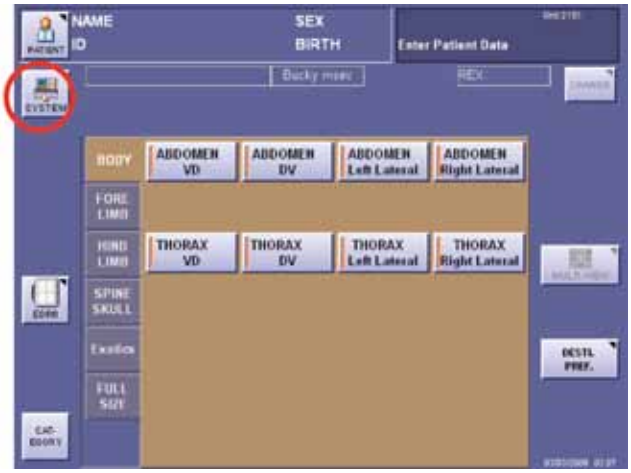


Figure 2-1: Main Screen

Shut-down

On the Main screen select **SYSTEM**, *see Figure 2-1: Main Screen*. Select **SHUTDOWN**.

The **SHUTDOWN after trans** button may also be used to shutdown the system. This will allow the system to complete the transfer of images before shutting down.

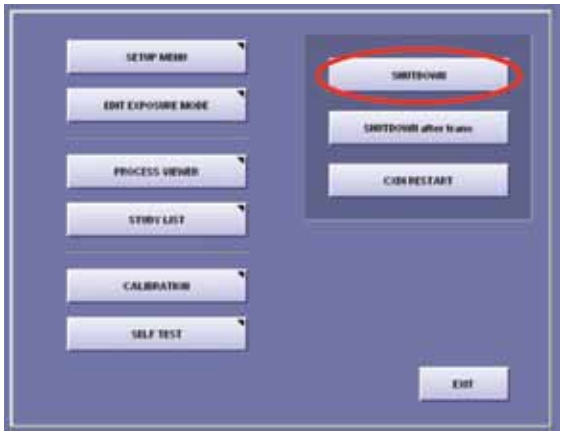


Figure 2-2: System > Shutdown

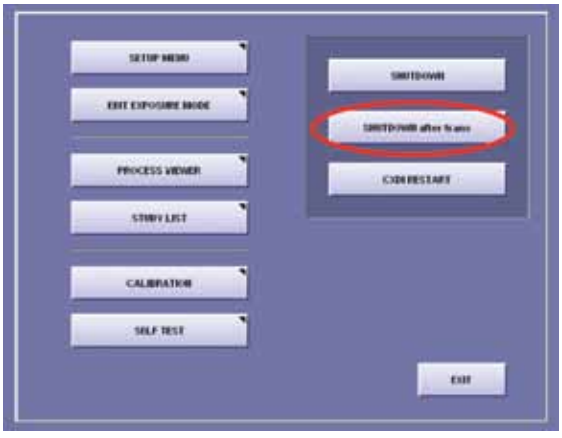


Figure 2-3: System > Shutdown after trans

To reboot the system, turn off the panel power supply box by depressing the ON-OFF switch on the back of the panel power supply box. Wait 1-2 minutes. Turn on the panel power supply box by depressing the ON-OFF switch. Start the RapidStart™ system.

Chapter 3: Image Acquisition

Entering Patient Information

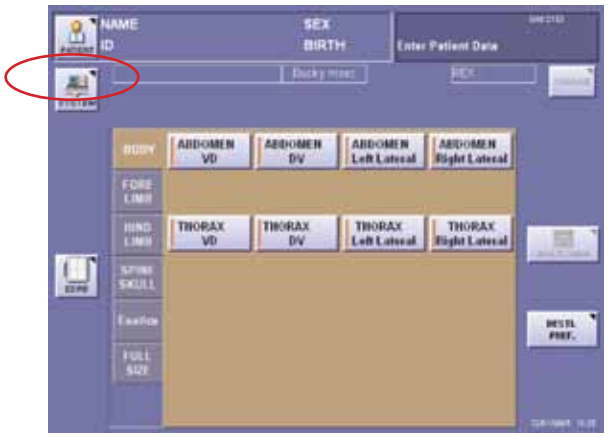


Figure 3-1: Main Screen, Select PATIENT

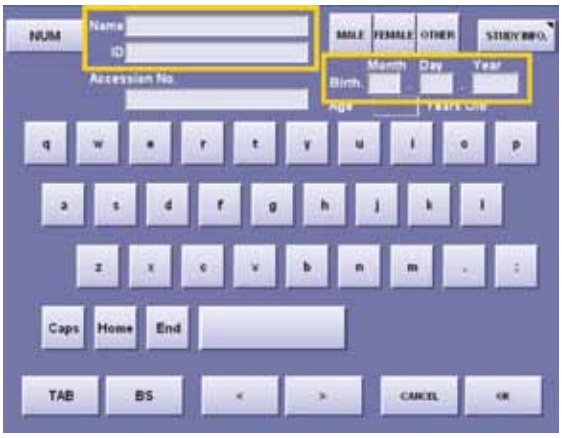


Figure 3-2: Patient Information Screen

Select **PATIENT** on the Main screen. On the Patient Information Screen, **enter**:

1. Required information. *See Appendix A Recommended Small Animal Patient Data Entry Protocol page 44.*
2. Name — Enter the patient's name (ownerslastname petname), in a consistent manner. It is suggested that all capital letters be used. The maximum length is 63 alphanumeric characters.
3. ID — Enter patient identification (maximum length is 32 alphanumeric characters). Each patient should be assigned a unique identifier.

Optional information on the Patient Information Screen

Choose the patient's sex by selecting MALE, FEMALE, or OTHER.

Birth - Enter the patient's birth date. The patient's age will be automatically calculated if the month, day, and year are entered as follows:

Month — 2 digits (i.e., 01 for January).
Day — 2 digits (i.e., 01 for the 1st day of the month).
Year — 4 digits (i.e., 2005).

System will not calculate age if date format is invalid.

Select the NUM key to toggle to the numeric keyboard.

Chapter 3: Image Acquisition

Entering Patient Information *(continued)*

Study Info

1. If study menus have been customized select **STUDY INFO** button.
2. Select the desired study information from the screen (if configured).
3. Select **OK** to save the study information. Alternatively, select **CANCEL** to return to the Patient Information screen without saving any changes to the study information.

Figure 3-3: Patient Information Screen, Select STUDY INFO Button.

Figure 3-4: STUDY INFO Screen

4. Select **OK** on the Patient Information screen to return to the **Main** screen.
5. If incorrect data was entered, select **PATIENT** to make changes.

Study information may be changed BEFORE the study is ended by selecting PATIENT on the main screen. Permanent changes cannot be made after the study is ended.

Chapter 3: Image Acquisition *(continued)*

Acquiring an Image

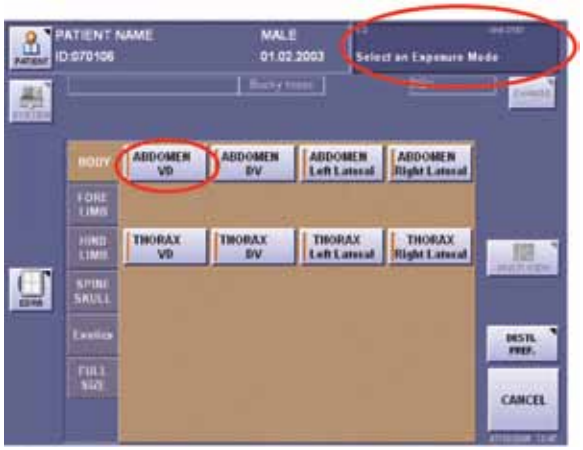


Figure 3-5: Initial Acquisition Screen

1. Select the 'body part tab' for the examination to be performed.
2. Select an **Exposure Mode** (view).
3. Set the technique as indicated on the Sound-Eklin™ Technique Chart on the X-ray machine.
4. Press the footswitch half way down to engage the rotor .
5. Hold until rotor is up to speed.
6. Press all the way down on the footswitch until X-ray machine fires.

Standard focal distance from the X-Ray tube to the sensor panel is 40 inches.

Preview the Image

A preview of the acquired image will appear on the screen approximately 4 seconds after exposure.

The preview screen allows evaluation of the image for appropriate positioning, motion, and technique.

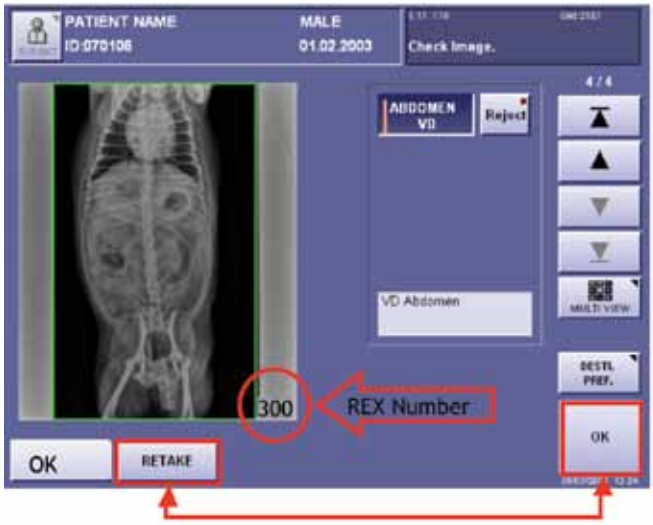


Figure 3-6: Initial Image Capture

Chapter 3: Image Acquisition

Preview the Image *(continued)*

Figure 3-7: Image from Saturated and Unsaturated Panel

Evaluate Image

The number in the lower right corner of the image is the reached exposure (REX) number. *See Figure 3-6.*

The REX value indicates the relative number of X-ray photons that reached the sensor panel.

An acceptable range for the REX number on the RapidStart™ is 300-1200.

REX values less than 300 may be objectionably grainy when zoomed and should be repeated.

REX values in excess of 800 will not affect image quality, but indicate more exposure than necessary was used. With very high REX values (>2000) the panel may saturate and be unable to record the anatomy. When this occurs a black ghost image may appear over the thinner parts of the field of view.

The number that appears on the initial preview screen is an average value for the entire acquisition area of the sensor panel.

The REX number will change when the region of interest (ROI) or Brightness and Contrast is adjusted.

The region of interest may be adjusted in the QA screen.

Image Is Acceptable

If the image is acceptable, select **OK** and continue the study. *See Figure 3-6: Initial Image Capture*

Image Is Unacceptable

If the image is not acceptable, select **RETAKE**. *See Figure 3-6: Initial Image Capture.* Select **OK** in the dialogue box to retake the image. The unit will reset to allow immediate retake of the image in the same radiographic view.

Chapter 3: Image Acquisition *(continued)*

Retake Image

Retake image due to low REX value or noisy (grainy) image, incorrect positioning, or movement.

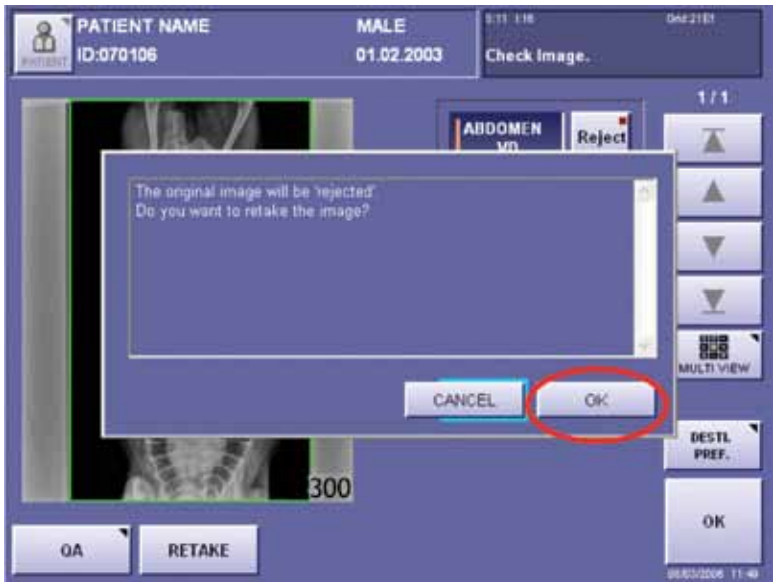


Figure 3-8: Retake Image Using Same Exposure Mode

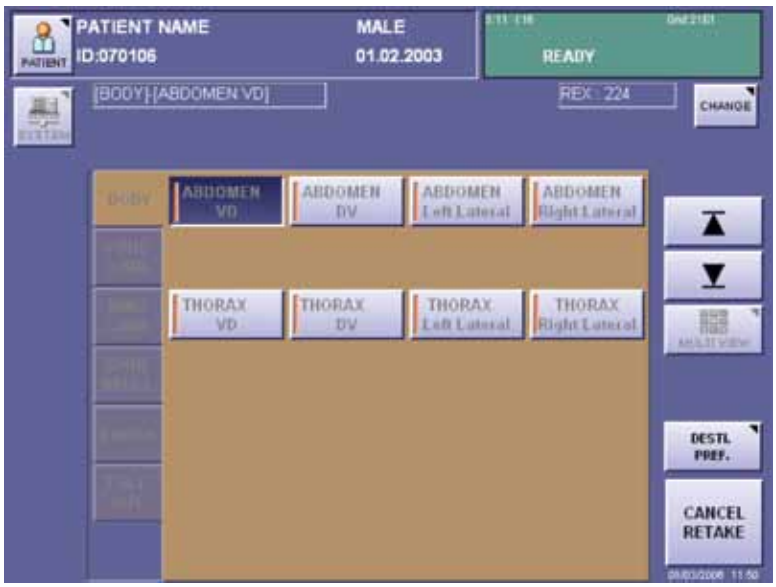


Figure 3-9: Retake Image Using Same Body Part

Chapter 3: Image Acquisition *(continued)*

Reject Image

If the image is not acceptable due to mislabeling, select **REJECT**. Select **OK** in the lower right-hand corner of this screen. The main screen will appear allowing you to select another body part.

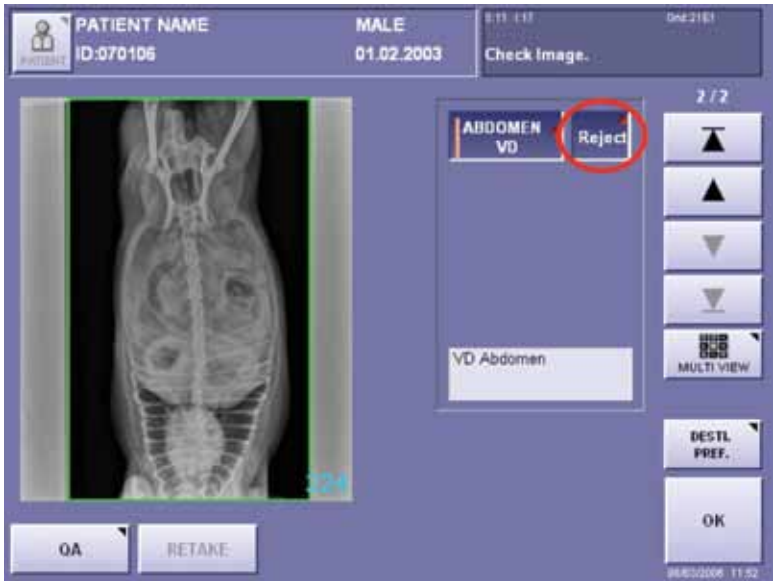


Figure 3-10: Reject Image Capture

Images that have been rejected by selecting RETAKE or Reject are not permanently deleted. The Reject button is a toggle. Select the Reject button again to restore the image to the study. Images may also be restored to the study by selecting the MULTI VIEW button. This will display a thumbnail of all images in the current study. Rejected images will have an X next to them (figure 3-11a). To restore a rejected image in the multiview screen, select the image and select the Reject button to toggle it to off (figure 3-11b). The image will have a number beside it instead of an X when it has been restored to the study (figure 3-11c).

Chapter 3: Image Acquisition

Reject and Retake Image *(continued)*

Figure 3-11a: Rejected Image Capture

Figure 3-11b: Restoring An Image Capture

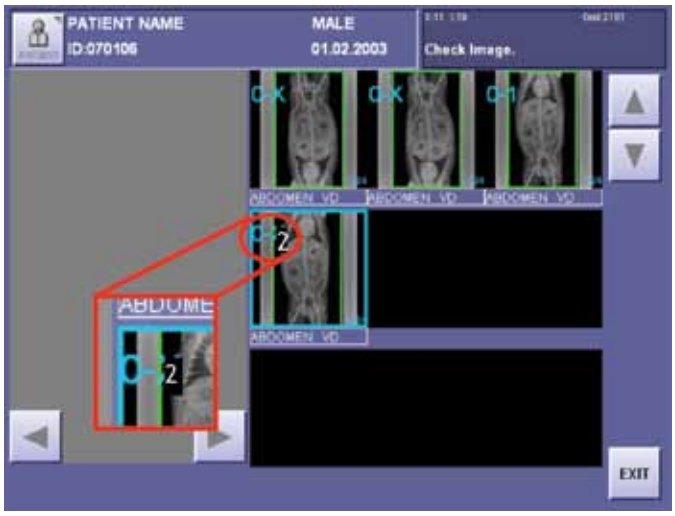


Figure 3-11c: Restored Image Capture

The storage capacity of the RapidStart™ console is approximately 3000 images.

Chapter 4: Processing the Image

Image Quality Assurance

All body part (radiographic view) buttons are preset at the factory to yield consistent results with a wide variety of X-ray machines and techniques. These QA tools are very powerful and have a dramatic effect on image quality. These settings may be interactively altered on each image if desired. However, since the changes are permanent we do not recommend changing the default settings until you have sufficient experience with your new digital system, and are sure you want to permanently make changes. Any changes to the defaults should be done systematically for every view of that anatomical area. Indiscriminately changing the default settings can result in wide swings in image quality from view to view even when using the same radiographic technique.

It is recommended that any changes to the preset buttons be made with the support of a Sound-Eklin™ Service Representative.

An image that is too light or too dark does not require a retake.
Adjust the image using the following tools and steps.

1. Select **QA**.

Figure 4-1: Initiating QA

Chapter 4: Processing the Image

Image Quality Assurance *(continued)*

2. Select the required tab.

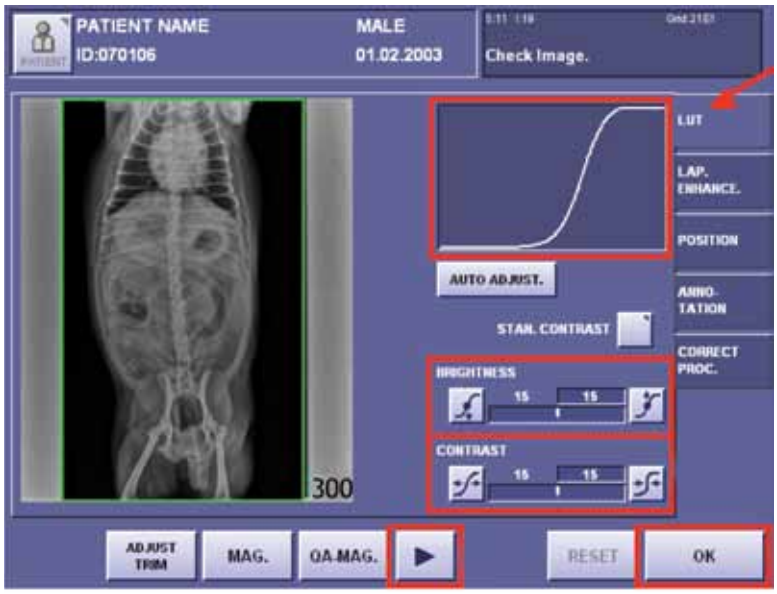


Figure 4-2: LUT Tab

LUT (Look Up Table)

The gray scale curve used to display the image is modified using the Look Up Table, **LUT**. Any changes in these parameters are immediately reflected in the displayed image.

Set the **BRIGHTNESS** of the image between 1 and 29. The value on the left is the saved setting. The value on the right is the current setting, which changes when the buttons are touched. Changing the brightness setting will change the brightness of the whole image.

Set the image **CONTRAST** between 1 and 29. The value on the left is the saved setting. The value on the right is the current setting, which changes when the buttons are touched. Changing the contrast setting will change the contrast of the whole image.

Select **OK** to save the changes.

If the new parameters are to be saved as the default select the small arrow in the bottom middle of the **QA** screen and **SAVE PARAM** to save the new parameters for the exposure modes as default. These parameters cannot be saved as default if the image has been accessed from the study list.

The system password must be entered to save changes. Contact Technical Support if you forget this password.

Chapter 4: Processing the Image

Image Quality Assurance *(continued)*

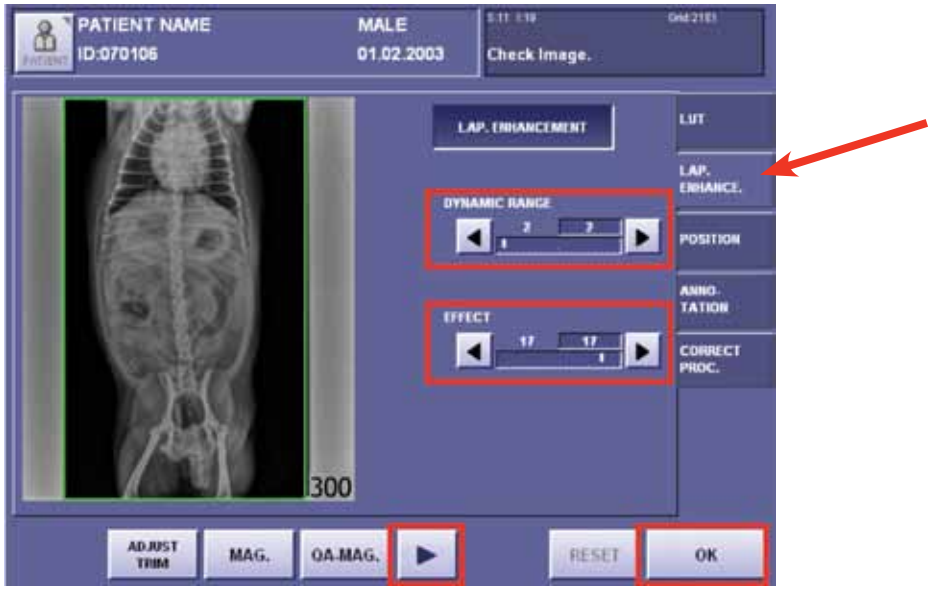


Figure 4-3: LAP. ENHANCE.Tab

Lap. Enhance. (Laplacian Enhancement)

Laplacian Enhancement is the image processing algorithm and allows the user to enhance the image. The actual raw data changes as the DYNAMIC RANGE and EFFECT are modified.

Set the dynamic range of the image between 1 and 20 (the typical range is between 1 and 5). This controls the spread of pixel values. A lower setting effectively subtracts exposure from over exposed areas and adds to under exposed areas. The value on the left is the saved setting. The value on the right is the current setting, which changes when the buttons are selected.

Set the **EFFECT** of the image between 1 and 20 (the typical range is between 12 and 20). Effect enhances the contrast of the image. The value on the left is the saved setting. The value on the right is the current setting, which changes when the buttons are selected.

Select **OK** to save the changes.

If the new parameters are to be saved as the default, select the small arrow in the bottom middle of the **QA** screen and **SAVE PARAM**. These parameters cannot be saved as default if the image has been accessed from the study list.

The system password must be entered to save changes. Contact Technical Support if you forget this password.

Chapter 4: Processing the Image

Image Quality Assurance *(continued)*

Position

The body parts menus are designed to give the proper orientation based on a recognized pattern of animal orientation. However, sometimes it is necessary to position an animal differently than what the system is expecting. The image must be oriented manually to be displayed correctly.

The position may be adjusted by selecting the **POSITION** tab.

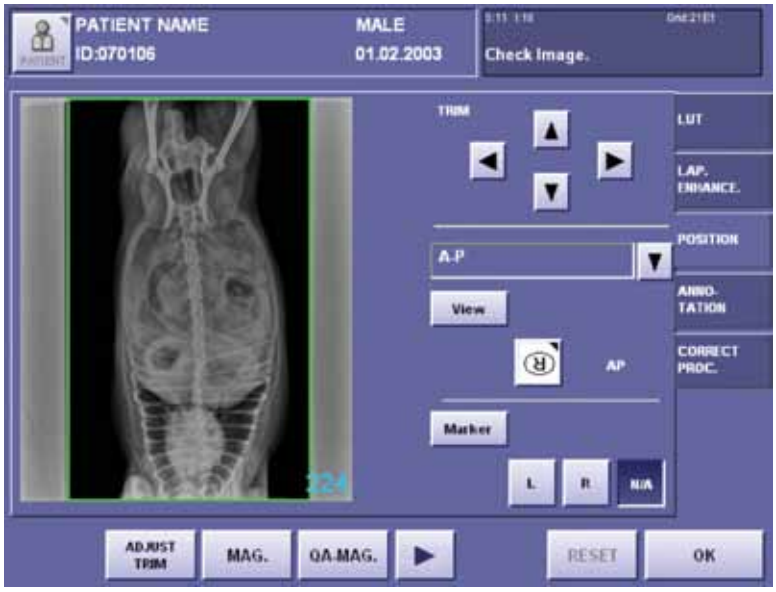


Figure 4-4: POSITION Tab

Orientation

Select the orientation button. The image may be:

- Flipped horizontally or vertically or
- Rotated 90 or 180 degrees clockwise or counterclockwise.

Select **OK** to change the image orientation.

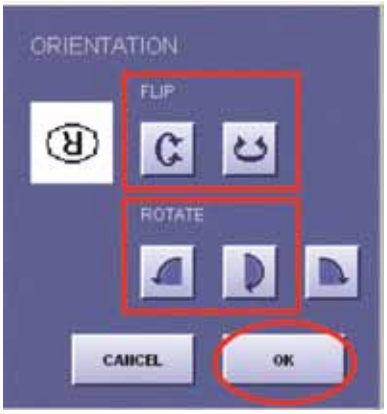


Figure -: Orientation Pop-up

Chapter 4: Processing the Image

Image Quality Assurance *(continued)*

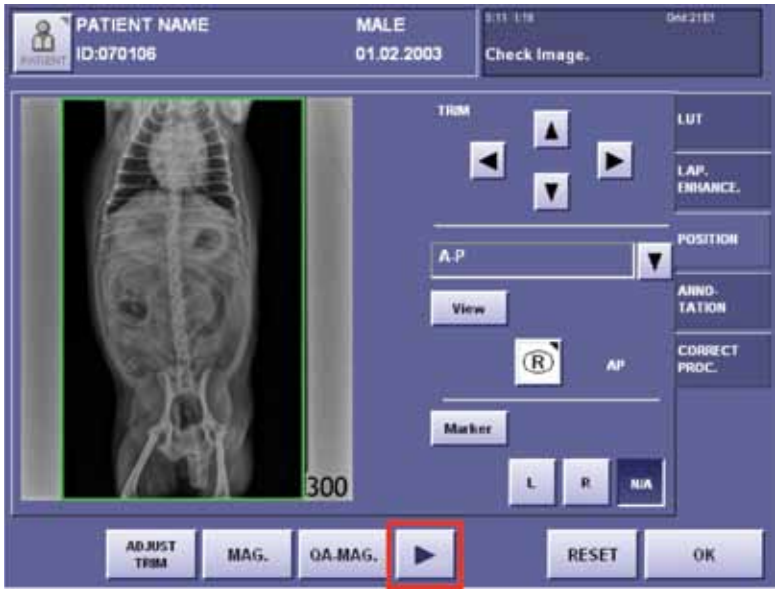


Figure 4-5: Orientation Corrected

If the new parameters are to be saved as the default, select the small arrow in the bottom middle of the **QA** screen and **SAVE PARAM**. These parameters cannot be saved as default if the image has been accessed from the study list.

The system password must be entered to save changes. Contact Technical Support if you forget this password.

The Left and Right markers provided by the digital software are an overlay. Exercise care when utilizing the 'flip' feature as the image will be 'flipped' behind the overlay. This may lead to incorrectly marked images. Conventional lead markers may be placed on the table top/sensor panel to ensure the image is marked correctly.

Chapter 4: Processing the Image

Image Quality Assurance *(continued)*

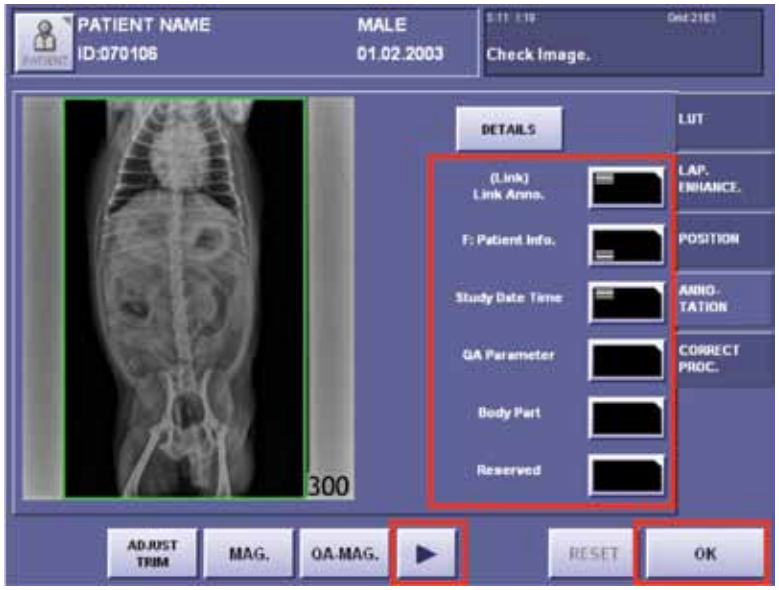


Figure 4-6: ANNOTATION Tab

Annotation

The annotation position for 'Exposure Annotation' can be changed by selecting the respective buttons.

- Exposure Anno. contains the L/R marker.
- Annotation1 contains the patient information.
- Annotation2 contains the practice information.

Select **OK** to apply the changes.

If the new parameters are to be saved as the default, select the small arrow in the bottom middle of the **QA** screen and **SAVE PARAM**. These parameters cannot be saved as default if the image has been accessed from the study list.

The system password must be entered to save changes. Contact Technical Support if you forget this password.

Chapter 4: Processing the Image

Image Quality Assurance *(continued)*

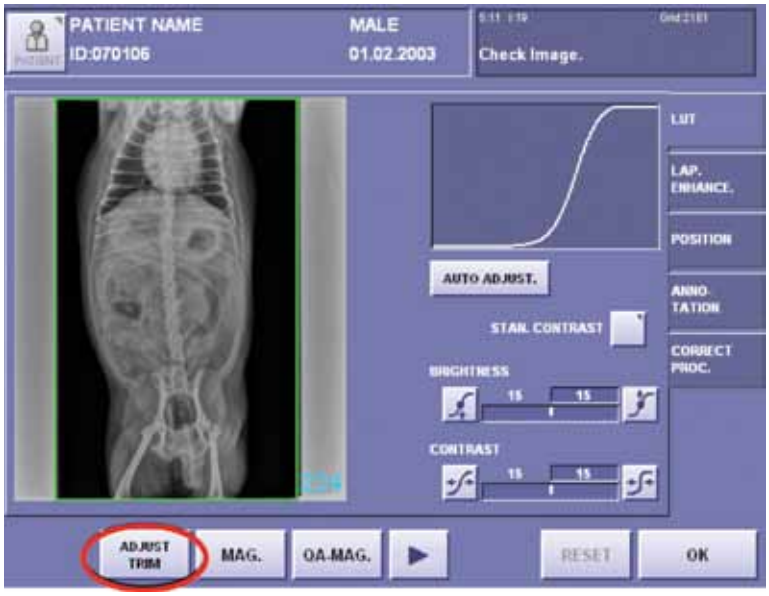


Figure 4-7: Adjust Trim

Adjust the Trim

When the button reads **ADJUST TRIM** (default), the image may be trimmed/cropped by touching the screen to create a box around the area of the image the user wishes to keep.

Select the screen in opposing corners over the area of interest. A red border will appear around the selected area.

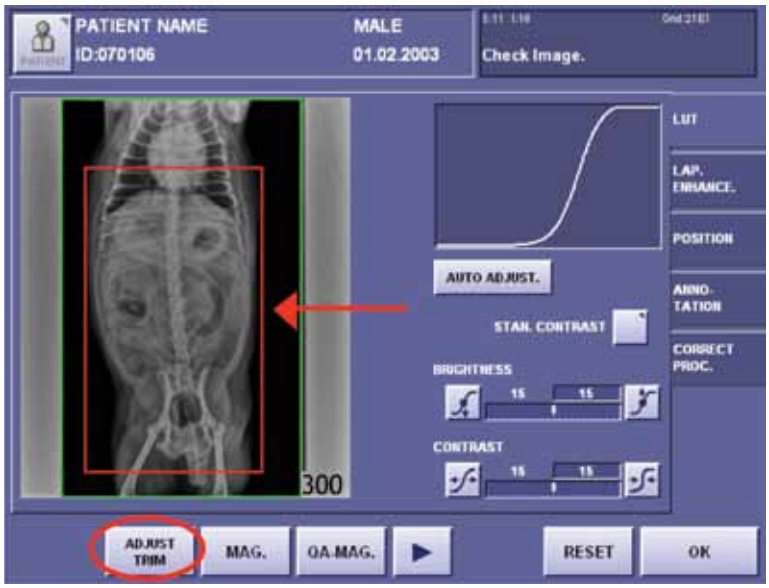


Figure 4-8: Select Area Of Interest

The Green box around the image is an auto-crop feature in the software. Only the area inside the Green box will be transferred to the workstation(s) and/or a ReadyStore™ R5.

Chapter 4: Processing the Image

Image Quality Assurance *(continued)*

If the image is cropped in error,

Select the **RESET** button to reset the image to the original settings before selecting the **OK** button.

The ADJUST TRIM button is a toggle button. Select the ADJUST TRIM button to toggle to ADJUST ROI. Please make sure the proper button is selected for the desired adjustment.

Adjust ROI (Region of Interest)

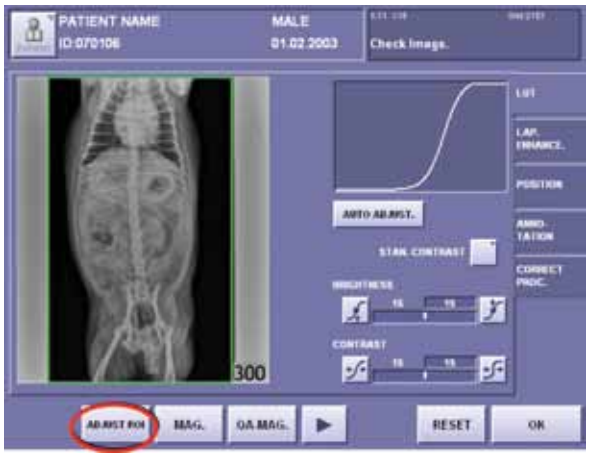


Figure 4-9: Adjust ROI

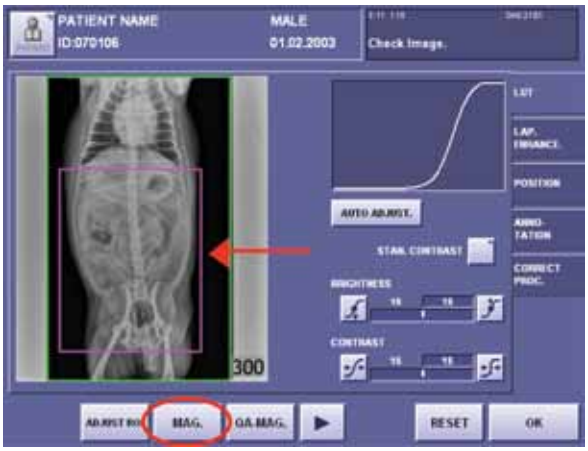


Figure 4-10: Selected ROI

Select **ADJUST TRIM**. This will toggle to **ADJUST ROI**.

When the button reads **ADJUST ROI**, the region of interest may be adjusted for brightness and contrast.

Select the anatomical area of interest by touching the screen in opposing corners. A pink border will appear around the selected area. The brightness and contrast will be optimized to display the selected region of interest.

Chapter 4: Processing the Image

Image Quality Assurance *(continued)*

View Enlarged Image

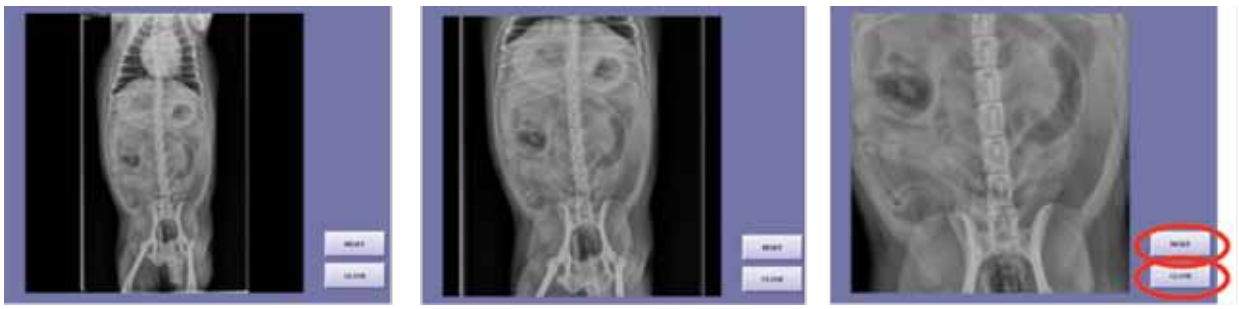


Figure 4-11: MAG. Image Views

Select **MAG.** or **QA-MAG.**

The image will display on the full screen.

The image may be magnified up to three times by touching the screen. The image is magnified and recentered from the spot where the image is touched.

- Select RESET to establish the original magnification factor.
- Select CLOSE to exit and return to the QA screen.

Completion of Image Quality Assurance

Select **OK** to accept changes and return to the image preview screen.

Chapter 5:
Transferring Images from the RapidStart™

Ensure the RapidStart™ is connected to the local area network (LAN).
Transfer the study to a ReadyStore™ R5 at the earliest opportunity to ensure adequate back-up.
The appropriate destination must be preset before images can be transferred.

A copy of the study is transferred based on individual practice preferences and may be sent to one or multiple destinations.
Studies stored on the ReadyStore™ R5 may be viewed at the ReadyView™ workstation following the initial transfer.

Setting the Image Destinations

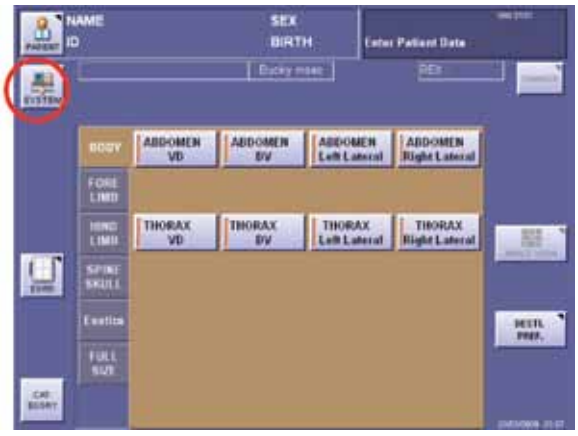


Figure 5-1: Main Screen, Select SYSTEM

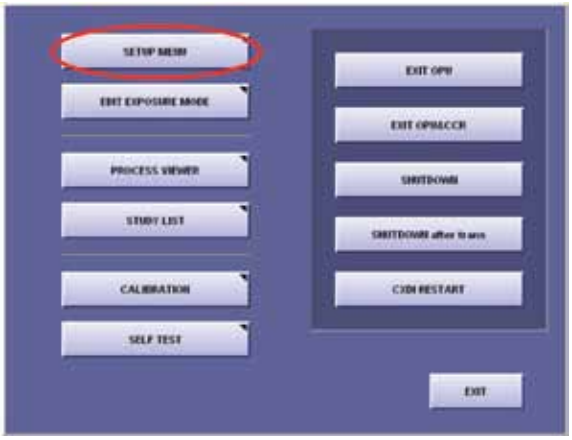


Figure 5-2: SYSTEM > SETUP MENU

1. On the Main Screen, select **SYSTEM**.
2. Select **SETUP MENU**.
3. Select **DESTINATION**.
4. Select **STORAGE**.

Figure 5-3: Destination Tab

Chapter 5: Transferring Images from the RapidStart™

Setting the Image Destinations *(continued)*

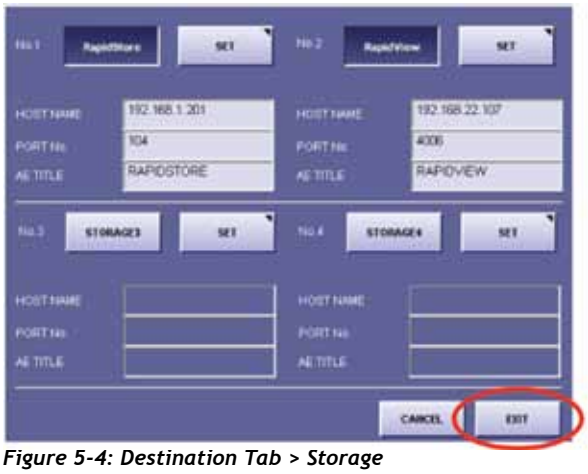


Figure 5-4: Destination Tab > Storage

5. Select the desired destination(s).
   ReadyStore™ specifies a **ReadyStore™** R5 as a destination. **ReadyView™** specifies a **ReadyView™** workstation, PC, or laptop as a destination.

   Select the buttons to turn them on or off. Figure -4: Destination Tab > Storage demonstrates **ReadyStore™** and **ReadyView™** are turned on.

   Select **EXIT** after setting the appropriate destination(s) on or off.

   Only two storage destinations may be used at one time.
   If two storage destinations are to be used, only these combinations can be used. The names STORAGE3 and STORAGE4 can modified to reflect additional destinations.
   ReadyStore™ and eFilm™ local
   ReadyStore™ and STORAGE4
   STORAGE3 and eFilm™ local
   STORAGE3 and STORAGE4

Chapter 5:
Transferring Images from the RapidStart™ *(continued)*

Transferring the Image

When the destination has been set, the images are automatically transferred to the selected destination when either the **SEND** button or the **END STUDY** button is selected. Active transfer is indicated by a flashing green light in the upper right hand corner of the screen.

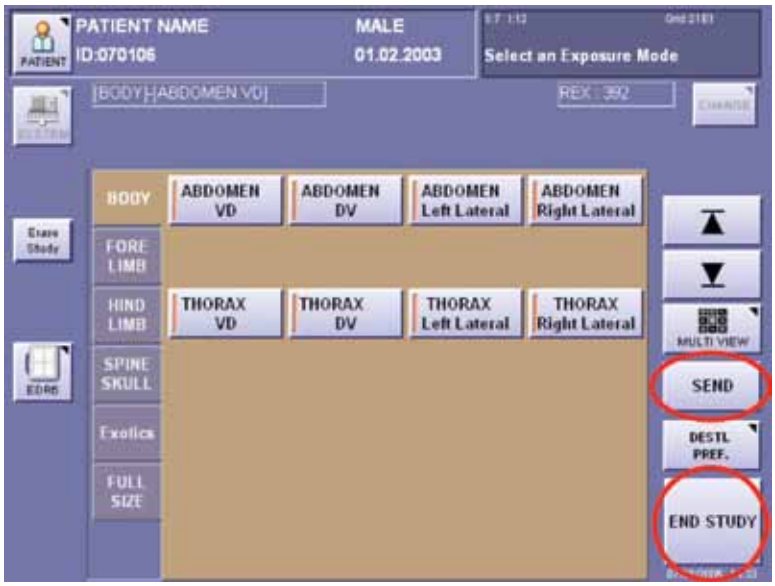


Figure 5-5: Return to Main Screen

Do not shut the system down while the green light is flashing.

Send Images

Send images one of two ways:

1. Select the **SEND button** while the study is in process — sends each image individually.
2. Select the **END STUDY** button after the study is complete — sends all the images.

The study should be ended immediately upon completion by touching the END STUDY button. This will prevent images from a different patient from being added to the study in error.

Chapter 6:
Customizing RapidStart™ Settings

Study Info

The Study Info is information associated with a radiographic study. Information pertaining to the study description, referring physician, physician, operator, and institution can be enabled/disabled and essential/optional for data input.

Modifications to the Study Info setup cannot be made during a study.

Modify the Study Information

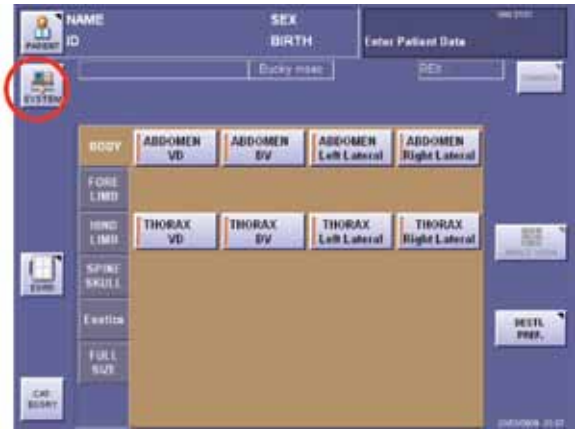


Figure 6-1: Main Screen, Select SYSTEM

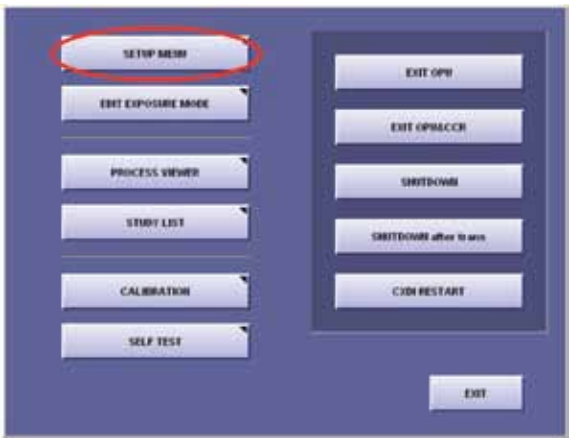


Figure 6-2: SYSTEM > SETUP MENU

1. Select SYSTEM.
2. Select SETUP MENU.
3. Select ADMINISTRATOR SETUP tab.

Figure 6-3: System Information Screen ADMINISTRATOR SETUP Button

Chapter 6: Customizing RapidStart™ Settings

Study Info *(continued)*

4. Select STUDY INFO.

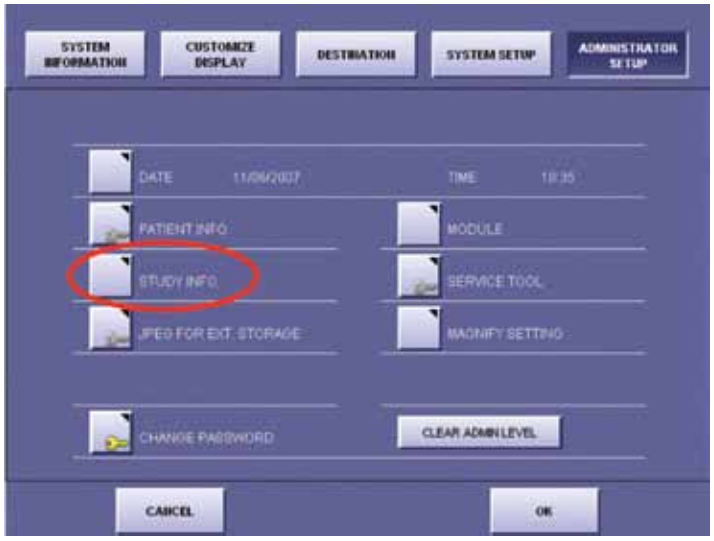


Figure 6-4: Administrator Setup Screen STUDY INFO Button.

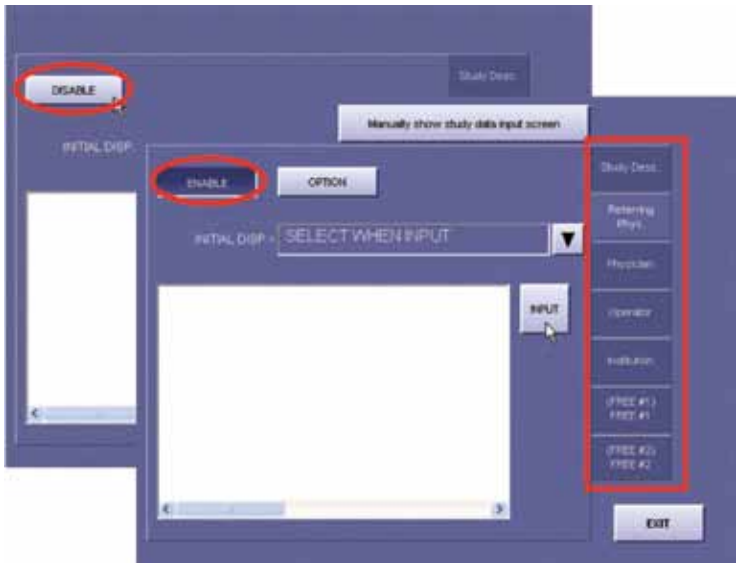


Figure 6-5: ENABLE/DISABLE Button

5. Select a tab on the right-hand side.
   Select from Study Desc., Referring Phys., Physician, Operator, or Institution.

   To allow data input of information select **DISABLE**. The button will toggle to **ENABLE**.

The ENABLE button is a toggle button.
Select the ENABLE button to toggle to DISABLE.

Chapter 6: Customizing RapidStart™ Settings

Study Info *(continued)*

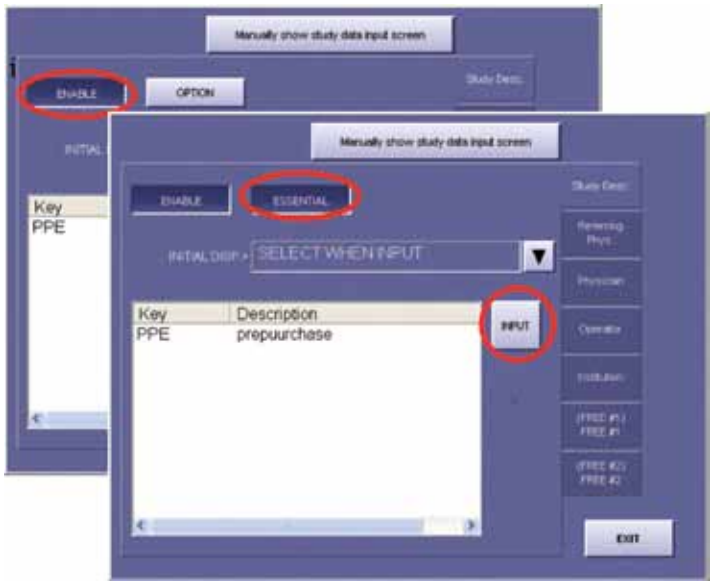


Figure 6-6: OPTION/ESSENTIAL Button

To require data input of information select **OPTION**. The button will be relabeled **ESSENTIAL**.

The OPTION button is a toggle button.
Select the OPTION button to toggle to ESSENTIAL.
Selecting ESSENTIAL for the study info will cause the field to require data input at the time of patient entry.

To Create a Selection List

1. Select **INPUT**. the Study Desc., a popup box will appear.
2. Type in a **"key"** and **"description"**.
3. Select **OK** to close the box and add the information to the selection list.
4. Select **CANCEL** to close the popup without adding the information.
5. For all other study information, a popup will appear. Enter the name of the referring physician, physician, operator, or institution.

   To continue adding data to the selection list repeat steps.

Figure 6-7: Study Desc. Dialog Box

Chapter 6: Customizing RapidStart™ Settings *(continued)*

Editing Exposure Mode Parameters

The body part buttons in the exposure mode display can be altered in the following ways:

- Edit the Body Part Button Names
- Edit the Body Part Button Names
- Edit the DICOM Series Description
- Copy the Body Part Buttons to Save as New Menu Buttons
- Change the Order and Location of the Body Part Buttons
- Move, Add or Change a Body Parts tab List
- Change the Image Processing (IP) and Lap Enhance Parameters

If editing the body part button names, the DICOM series description should also be altered to ensure uniformity. Refer to "Edit the Series Description." A password is required to make these changes.

Edit the Body Part Button Names

1. Select **SYSTEM**, see *Figure 6-1: Main Screen, Select SYSTEM Icon.*
2. Select **EDIT EXPOSURE MODE.**
3. Select **EDIT PARA.** (default) if not already selected.
4. Select a body part tab.

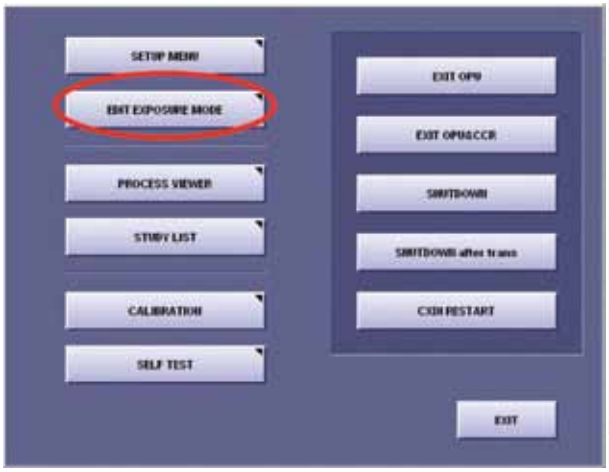


Figure 6-8: SYSTEM Screen, Select EDIT EXPOSURE MODE

Figure 6-9: Body Parts Button Menu, Select EDIT PARA.

Chapter 6: Customizing RapidStart™ Settings

Editing Exposure Mode Parameters *(continued)*

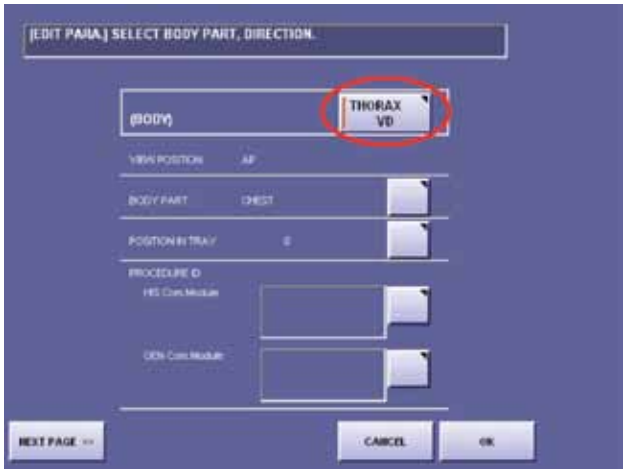


Figure 6-10: Edit Body Part Button Screen

Figure 6-11: Edit Button Onscreen Keyboard

5. Select a body part button. The edit screen will display and the Body Part button, as it is currently saved, will display toward the top of the screen.
   - Select the button to edit the name. The edit keyboard will display with the current name highlighted at the top of the window.
   - Select forward cursor key at the bottom of the keyboard to deselect the entire name.
   - Select backspace key to erase the unwanted sections of the name.
   - Use the keyboard to type in the desired name.*
   - Select **OK** when complete and exit the edit keyboard.
   - Select OK to return to the body part buttons.
   - Repeat steps* to continue altering body part names.
   - When all desired names have been altered, select **EXIT** *twice* to return to the main screen.

If the parameter is locked, another popup window will display requesting the system password. Enter the password to continue. Contact Technical Support if you forget this password.

Chapter 6: Customizing RapidStart™ Settings

Editing Exposure Mode Parameters *(continued)*

Edit the DICOM Series Description

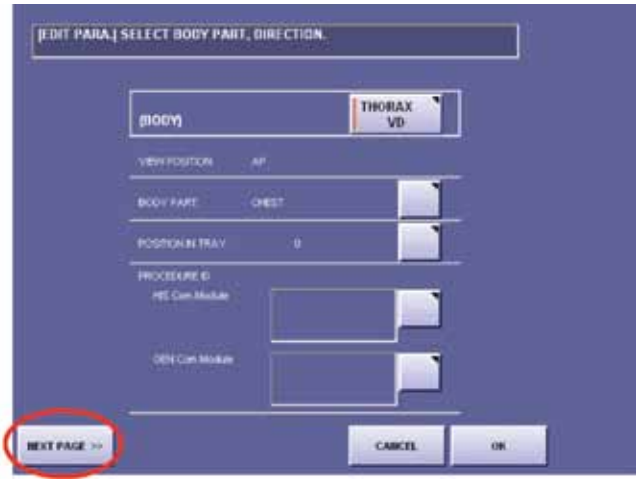


Figure 6-12: Edit Body Part Button Screen, Select **NEXT PAGE**

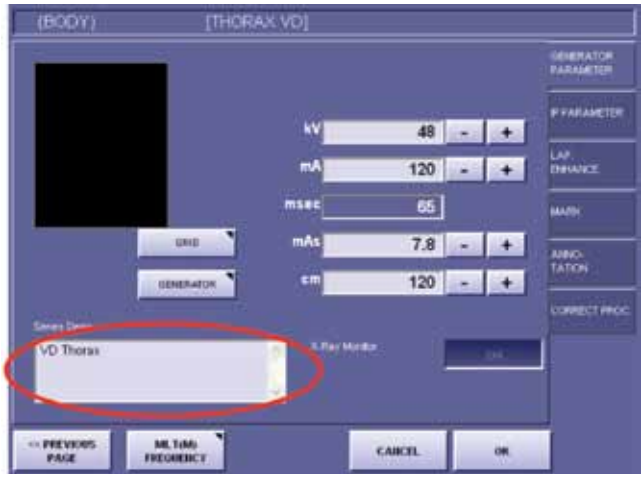


Figure 6-13: Edit Body Part Button Series Desc. Field

1. Select **SYSTEM**, see *Figure 6-1: Main Screen, Select SYSTEM Icon*.
2. Select **EDIT EXPOSURE MODE**, see *Figure 6-8: SYSTEM Screen, Select EDIT EXPOSURE MODE*.
3. Select **EDIT PARA**. if not already depressed, see *Figure 6-9: Body Parts Button Menu, Select EDIT PARA*.
4. Select a body part tab, see *Figure 6-9: Body Parts Button Menu, Select EDIT PARA*.
5. Select a body part button. The edit screen will display, see *Figure 6-9: Body Parts Button Menu, Select EDIT PARA*.
6. Select the **NEXT PAGE** button. The series description will display in the lower left window.
7. Select the Series Desc. box to access the edit keyboard.
   - Select forward cursor key at the bottom of the keyboard to deselect the entire description.
   - Select backspace key to erase the unwanted sections of the description.
   - Use the keyboard to type in the desired description.
   - Select **OK** when complete and exit the edit keyboard.
   - Select OK to return to the body part buttons.
8. Repeat steps 4 through 7 to continue altering the series description of the desired body part names.
9. When all desired series descriptions have been altered, select **EXIT** twice to return to the main screen.

Chapter 6: Customizing RapidStart™ Settings

Editing Exposure Mode Parameters *(continued)*

Copy the Body Part Buttons to Save as New Menu Buttons

1. Select SYSTEM, see *Figure 6-1: Main screen, select SYSTEM icon.*
2. Select EDIT EXPOSURE MODE, see *Figure 6-8: SYSTEM Screen, Select EDIT EXPOSURE MODE.*
3. Select **COPY.**

Figure 6-14: Body Parts Button Menu, Select COPY

4. Select a body part Tab.
5. Select a **body part button**. The study button name will be highlighted in blue.
6. Select a blank body part button to place the copied item. It can be placed in a different body part **tab**.
7. Select **OK** when asked "Are you sure you want to copy it here?"
8. When all copies have been made, select **EXIT** *twice* to return to the main screen.

Refer to to alter the names of the duplicated buttons.
Be careful when copying exposure buttons due to the image display and processing parameters attached to each individual button. When copying Body part buttons to create new menu buttons, be sure to copy a button with similar parameters.

Chapter 6: Customizing RapidStart™ Settings

Editing Exposure Mode Parameters *(continued)*

Change the Order and Location of the Body Part Buttons

Figure 6-15: Body Parts Button Menu, Select MOVE

1. Select **SYSTEM**, see *Figure 6-1: Main Screen, Select SYSTEM*.
2. Select **EDIT EXPOSURE MODE,** see *Figure 6-8: SYSTEM Screen, Select EDIT EXPOSURE MODE*.
3. Select **MOVE**.
4. Select a body part tab.
5. Select a body part button. The study button name is highlighted in blue.
6. Select a blank body part button to temporarily place the item. It can be placed in a different body part tab.
7. A popup window will display with the following: “Are you sure you want to move it here?” Select **OK** to save the changes. If the parameter is locked, another popup window will display requesting the system password. Enter the password to continue.
8. Repeat steps 4 through 7 to continue changing the location of the body part buttons.
9. When all copies have been made, select **EXIT** *twice* to return to the main screen.

Chapter 6: Customizing RapidStart™ Settings

Editing Exposure Mode Parameters *(continued)*

Move, Add or Change a Body Parts Tab

Figure 6-16: Body Parts Button Menu, Select EDIT Tab

Figure 6-17: Tab List Pop-Up Window, Pre-Programmed Tab

1. Select **SYSTEM**, see *Figure 6-1: Main Screen, Select SYSTEM* .
2. Select **EDIT EXPOSURE MODE**, see *Figure 6-8: SYSTEM Screen, Select EDIT EXPOSURE MODE*.
3. Select **EDIT** tab. The tab list of body parts displays.

To Move a Body Part Tab

Select the body part tab to be moved.
Select the scroll buttons to move it up or down on the list to the desired location.

Repeat *step 4* to move additional body part tab in the tab list.

To Add A Body Part Tabto the Tab List

Select **ADD**. A popup window displays.

To add a Pre-Programmed Body Part tab.*

Select one of the buttons.

Select OK to add the button to the tab list.

Repeat steps* to add additional pre-programmed body part tab.

To Add a Custom Body Part Tab

Select onscreen keyboard button.*

Type in the desired body part name, and select **OK**.

Select **OK** again to return to the tab list of body parts.

Repeat step 6* to add additional custom body part tab.

Chapter 6: Customizing RapidStart™ Settings

Editing Exposure Mode Parameters *(continued)*

Figure 6-18: Tab List Pop-Up Window, Custom Tab

To Change a Body Part Tab Name

Select the name in the tab list and select **CHANGE TABNAME**.*

Select the **onscreen keyboard button**, see F*igure 8-20: Tab List Pop-up Window, Custom tab above*.

Type in the desired body part name, and select **OK**.

Select OK again to return to the tab list of body parts.

Repeat step 6* a through d to change additional body part tab names.

4. When all changes are complete, select **OK**.
5 Select **OK** when asked “Save the changed parameters?”
6. When all changes have been made, select **EXIT** *twice* to return to the main screen.

Chapter 6: Customizing RapidStart™ Settings

Editing Exposure Mode Parameters *(continued)*

Change the Image Processing (IP) and Lap Enhance Parameters

Warning: DO NOT change any IP parameters unless directed by a Sound-Eklin™ service representative. Incorrect IP settings will result in poor image quality.

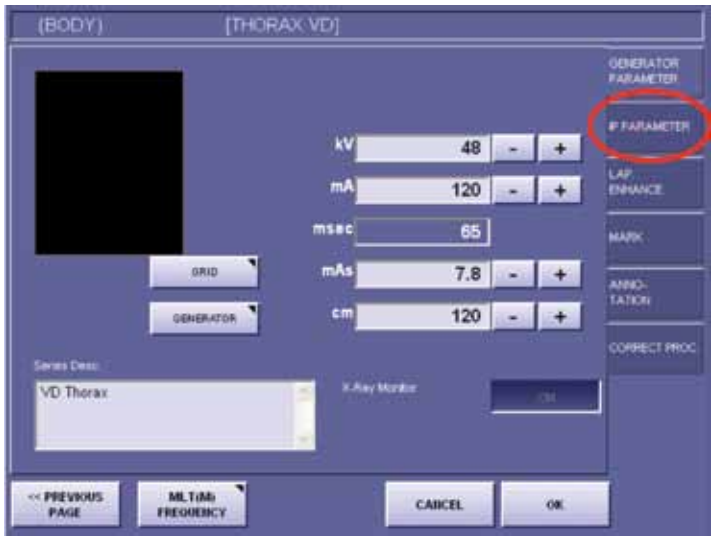


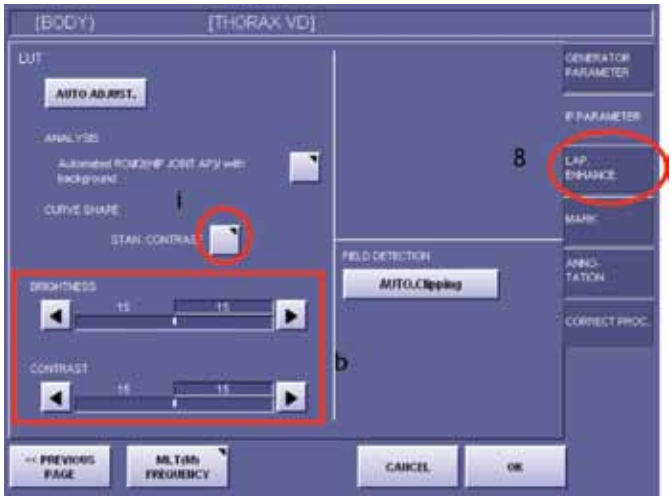
Figure 6-19: Select IP PARAMETER Button

1. Select **SYSTEM**, see *Figure 6-***1: Main Screen, Select SYSTEM.**
2. **Select** EDIT EXPOSURE MODE, see *Figure 6-8: SYSTEM Screen, Select EDIT EXPOSURE MODE.*
3. Select **EDIT PARA.** if not already depressed, see *Figure 6-9: Body Parts Button Menu, Select EDIT PARA.*
4. Select a body part tab, see *Figure 6-9: Body Parts Button Menu, Select EDIT PARA.*
5. Select a body part button. The edit screen displays, see *Figure 6-9: Body Parts Button Menu, Select EDIT PARA.*
6. Select **NEXT PAGE** button. The series description displays in the lower left corner of the window, see *Figure 6-12: Edit Body Part Button Screen, Select NEXT PAGE.*
7. Select the **IP PARAMETER** tab on the right side of the screen.
   - To change the CURVE SHAPE.

     Select the square box next to the currently saved curve shape.

Chapter 6: Customizing RapidStart™ Settings

Editing Exposure Mode Parameters *(continued)*



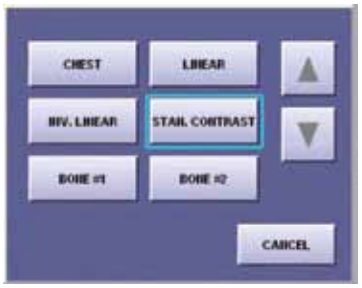


Figure 6-21: Select a Curve Shape

Figure 6-20: Changing Curve Shape

7. Select the **IP PARAMETER** tab on the right side of the screen.
   - To change the CURVE SHAPE.
     Select the square box next to the currently saved curve shape.
     Select the desired curve shape.
     The IP parameters screen redisplays with the newly selected curve shape.
   - To change the BRIGHTNESS or CONTRAST.
     Select ◂ or ▸ to select the desired number.

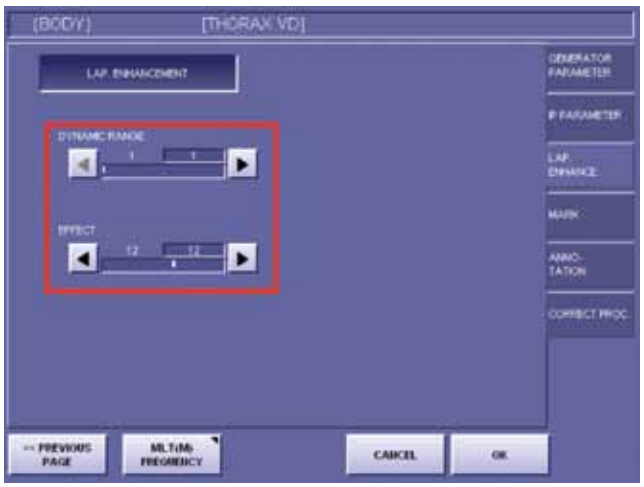


Figure 6-22: LAP ENHANCE. Tab

8. Select the LAP ENHANCE. tab on the right side of the screen.
   - To change the DYNAMIC RANGE or EFFECT.
     Select ◂ or ▸ to reach the desired number.
   - Select OK.
9. Select **OK** when asked “Save the changed parameter?”
10. Repeat steps 7 through 9 to continue changing the IP and Lap Enhance parameters for the body part buttons.

Annotation

The annotation is information associated with a radiographic study. Information pertaining to the practice name, date, time, and exposure mode can be displayed on the image.

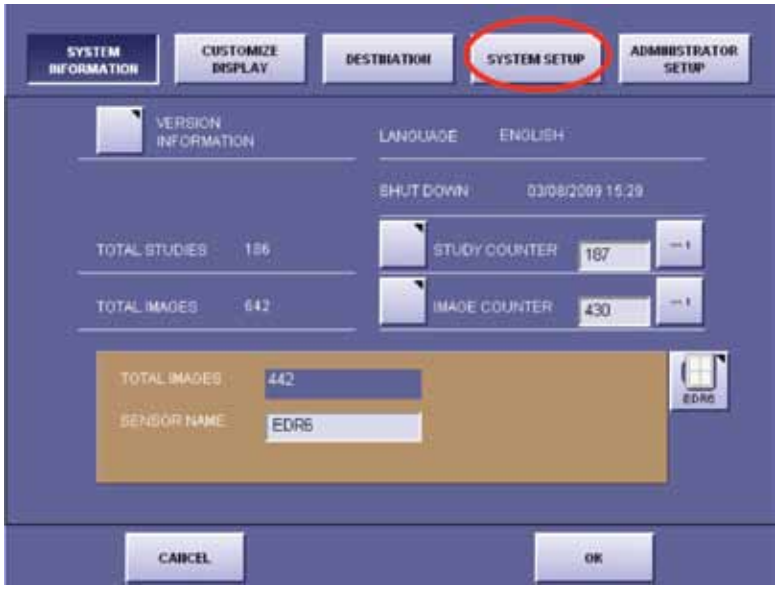


Figure 6-23: System Information Screen, Select SYSTEM SETUP Button

To Modify the Annotation

1. Select **SYSTEM**, see *Figure 6-1: Main Screen, Select SYSTEM* .
2. Select **SETUP MENU**, see *Figure 6-2: SYSTEM Screen, Select SETUP MENU*.
3. Select **SYSTEM SETUP** tab.
4. Select **ANNOTATION**.

Figure 6-24: System Setup Screen, Select ANNOTATION Button

Chapter 6: Customizing RapidStart™ Settings

Annotation *(continued)*

Annotation #1 displays the patient identification and owner's name as well as the date of birth if entered.

Annotation #2 displays the name of the practice and the system the images were acquired with.

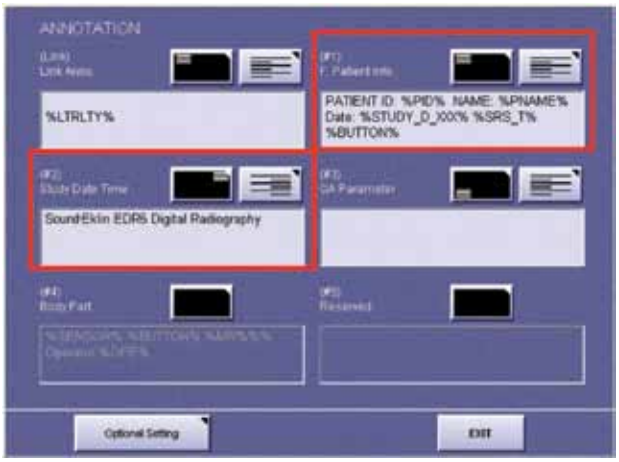


Figure 6-25: Available Annotation Fields

Figure 6-26: Image Annotation Onscreen Keyboard

To Add the Name of the Practice.

Select the Annotation #2 field.
Select **ONSCREEN KEYBOARD** button.
Place the cursor at the beginning of the line displaying "Sound-Eklin RapidStart™ Digital Radiography System."
Select **NEW LINE** button.
Position the cursor at the beginning of the new line.
Enter the name of the practice as it should be displayed.
Select **OK** to exit Keyboard screen.
Select **OK** to exit from Annotation #2 field screen.
Select **EXIT**.

To Modify The Name Of The Practice.

Select the Annotation #2 field.
Place the cursor in the line to be modified.
Select **ONSCREEN KEYBOARD** button.
Enter the name of the practice as it should be displayed.
Select **OK** to exit Keyboard screen.
Select **OK** to exit from Annotation #2 field screen.
Select **EXIT**.

For advanced annotation settings, i.e., OFA and PENNHIP or multiple practices sharing a system see Appendix A Recommended Small Animal

Patient Data Entry Protocol.

Chapter 6: Customizing RapidStart™ Settings *(continued)*

Sleep Mode

Sleep mode allows the sensor panel to “go to sleep”. This enables the panel time to discharge the previous radiation dose that has been applied to the sensor panel.

Figure 6-27: System Setup Screen, Select SLEEP MODE Button

Figure 6-28: Turn SLEEP MODE On

To Enable Sleep Mode

1. Select **SYSTEM**, see *Figure 6-1: Main Screen, Select SYSTEM*.
2. Select **SETUP MENU**, see *Figure 6-2: SYSTEM Screen, Select SETUP.*
3. Select **SYSTEM SETUP** tab, see *Figure 6-3: System Information Screen ADMINISTRATOR SETUP* Button.
4. Select **SLEEP MODE**.
5. Select **ON** to turn sleep mode on.
   - If sleep mode is **ON**, exposures cannot be made as quickly. Sleep mode allows the sensor panel to reset itself.
   - If sleep mode is **OFF**, “ghosting” may occur on the next exposure. Dense areas of the previous image may appear on the subsequent image.

   The ON button is a toggle. Select the ON button to toggle to OFF.
6. Enter the amount of seconds before the panel enters sleep mode. The panel will enter sleep mode after either ending a study or canceling a study.
7. Select **OK**.

Changing the RapidStart™ Password

System functions can be locked from non-authorized users. A system password will be required to access these functions.

A yellow key signifies that a function is locked and requires the system password to access it.

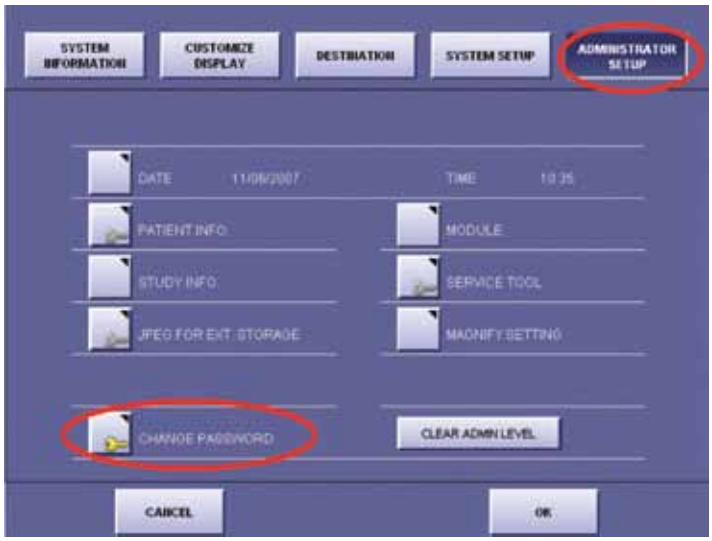


Figure 6-29: Administrator Setup Screen CHANGE PASSWORD Button.

1. Select SYSTEM, see *Figure 6-1: Main Screen, Select SYSTEM*.
2. Select SETUP MENU, see *Figure 6-2: SYSTEM Screen, Select SETUP MENU*.
3. Select *ADMINISTRATOR SETUP tab*.
4. Select *CHANGE PASSWORD*.
5. A popup will appear requesting the system password. Enter the system password, and select OK.
6. Another popup will appear. Enter the new password. Re-enter the new password, and select OK.

Please keep the system password in a safe place. Technical Support can help if the password has been misplaced.

Setting Date and Time

The system date and time can be modified to reflect current date and time where the RapidStart™ system is being utilized.

To change the date and time.

1. Select **SYSTEM**, see *Figure 6-1: Main Screen, Select SYSTEM*.
2. Select **SETUP MENU**, see *Figure 6-2: SYSTEM Screen, Select SETUP MENU*.
3. Select **ADMINISTRATOR SETUP** tab, see *Figure 6-3: System Information Screen, ADMINISTRATOR SETUP Button*.
4. Select **DATE**.
5. Modify the date, time, and time zone in the Windows Date and Time Properties window.

Changing the dates and time also modifies the computer system date and time.

Chapter 7: RapidStart™ Maintenance

Calibration Procedures

Perform the calibration *at least* once a year or if image quality degrades.

Figure 7-1: System > Calibration

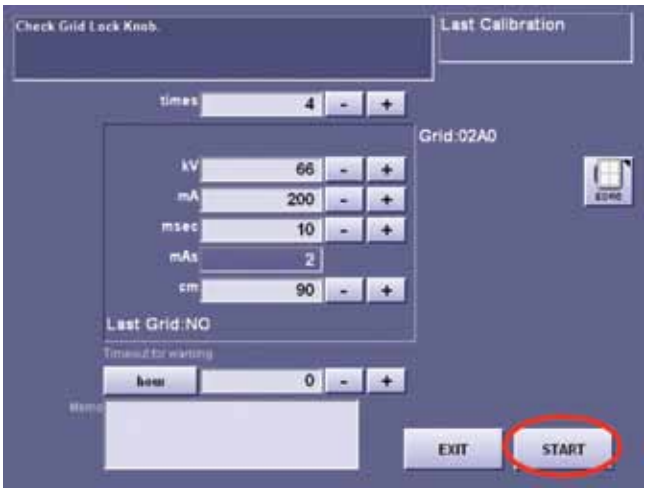


Figure 7-2: Start Calibration

1. Make sure there is nothing on the tabletop overlying the sensor panel, i.e., lead markers, gloves, etc. The tabletop should be wiped clean before performing calibration.
2. Align the crosshairs of the X-Ray machine collimator on the X, Y, and Z axis of the sensor panel. Open the collimator to include the entire sensor panel.
3. Set the focal distance from the anode to the sensor panel at approximately 40 inches
4. Set the technique on the X-Ray generator. A technique of 66 kVp and 2.0 mAs works well on most X-Ray machines.
   The RapidStart™ will indicate if the exposure is under or over the required dose. Adjust the technique until the system accepts the exposure.
5. To start the calibration.
   - Select **SYSTEM**.
   - Select **CALIBRATION**.
   - Select **START**.
   - Perform 4 exposures as prompted.

If there is a problem with the sensor panel, perform a self-test. Only do the self-test immediately after the Calibration has been completed and only with the guidance of a Technical Support representative.

Chapter 7: RapidStart™ Maintenance *(continued)*

System Reboot

System should be rebooted at least once a month. To perform a reboot, follow the Start-Up and Shutdown procedures in Chapter 2.

Note: The panel power supply box needs to be powered on first before commencing Start-up procedures.

Care of Touch Screen Monitor

Shutdown the RapidStart™ *before* cleaning the monitor.

Use electrostatic wipes (used for cleaning any monitor) or a clean soft cloth to clean the touch screen monitor.

Do not spray cleaners directly on the monitor.

Do not use any sharp objects on the monitor. Sharp objects may scratch or otherwise damage the monitor.

Chapter 8: Troubleshooting

Image Acquisition

No Exposure or Unable To Make Exposure

- Is the synchronization box switch set in the DR position?
- Is the synchronization cable plugged in properly?
- Has the patient data been entered?
- Has the exposure mode been selected?

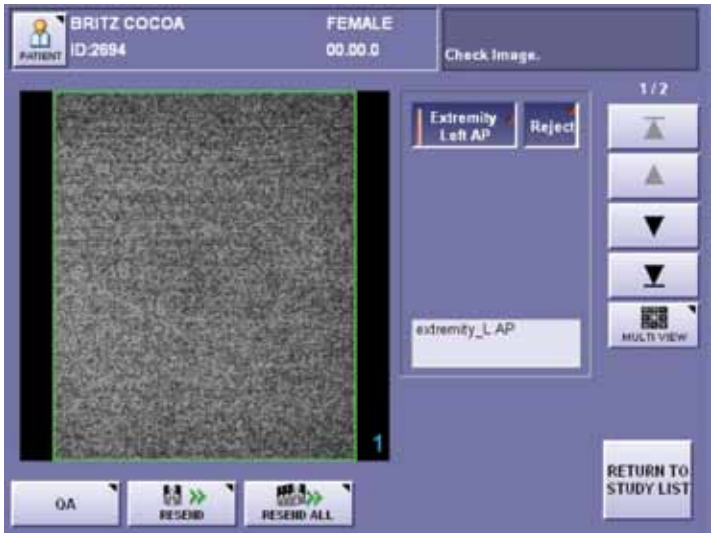


Figure 8-1: Noisy Exposure

Synchronization Issues

- Salt and pepper exposure — REX of 1 (noisy exposure)

  Misfire of exposure switch. Usually the rotor is not up to speed. Make sure 2 step process is followed for exposure.

  The synchronization cable is bad.

  The X-Ray unit foot switch is bad.

  The X-Ray unit is not emitting X-Ray.

- Error message CXDI- irradiation has stopped.

  The foot switch was double-clicked or is faulty.

Chapter 8: Troubleshooting

Image Acquisition *(continued)*

Image artifacts

- Latent image artifact.

  Check to see if sleep mode is off. It should be on.

- Environment related artifact

  Calibration was performed with an object overlying the sensor panel. Clean the tabletop and recalibrate.

  Sensor panel error

  Sensor panel connection

  Make sure cable is fully connected.

  If the cable is not fully connected, do not try to connect it while the RapidStart™ is running. Shut down the RapidStart™ and connect the cable correctly.

  If the cable is fully connected and the error still occurs, contact a Sound-Eklin™ service representative.

Image Transfer

DICOM connect error (-502)

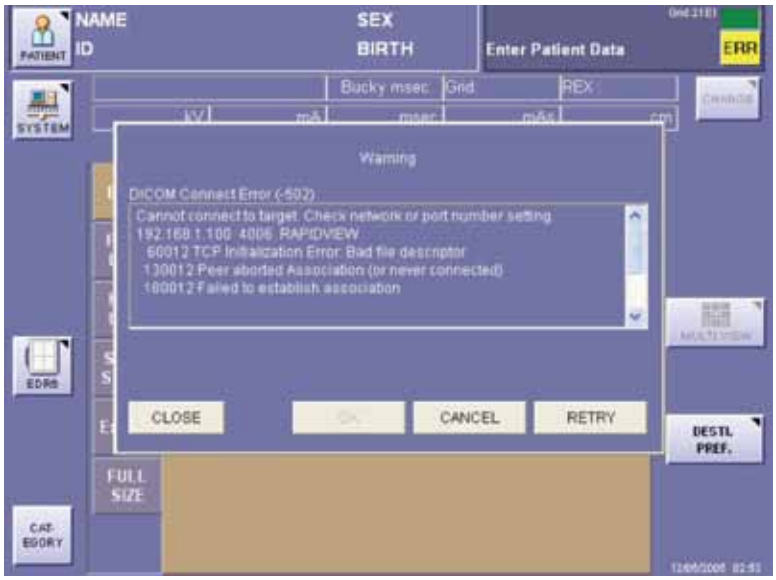


Figure 8-2: Connect Error

Chapter 8: Troubleshooting

Image Transfer *(continued)*

Error indicates an image destination could not be found.

- Network cable is not connected either at acquisition station or destination.
- Destination system is not turned on.
- Incorrect destination is selected.
- Network switch is off or unplugged or needs to be reset.
    - Network port on network switch is not functioning.
    - Firewall related issues. Check your firewall settings.
    - IP address has been changed or non-static. Static IP address is required.
    - Server is not running.
    - Server is running, but needs to be rebooted.

To Clear Error

- Select **CANCEL**. The unit will display “Images can be sent later”.
- Select **OK**.
- If the error bar is still present, repeat step 1 until the error bar is gone.
- If the error is persistent, call a Sound-Eklin™ service representative.

Images are Not Showing Up On Server or Workstation

- Check “Destination” to ensure the proper destination is active, see Chapter 5 Transferring Images from the RapidStart™.
- If no error is present on the capture system, check search criteria and local and remote tabs within eFilm™.

Appendix A:
Recommended Small Animal
Patient Data Entry Protocol

Consistent Entry of Patient ID Numbers:

The recommended patient data entry protocol is to enter the owner last name and pet name in the name field and the patient identification number assigned to the pet by the practice management software in the patient ID field.

Example: Name SMITH FLUFFY
ID 1000

In many practices the practice management software assigns only a client number and does not assign a patient identification number. In these cases the recommended patient data entry protocol is to enter the owner last name and pet name in the name field and the client number followed by the pet name in the patient ID field.

Example: Name SMITH FLUFFY
ID 1000FLUFFY

In some cases owners may choose to use the name of a deceased pet for a new pet resulting in a second Fluffy Smith. A number can be added to the patient name to indicate the pet is Fluffy 2, 3, etc.

Example: Name SMITH FLUFFY
ID 1000FLUFFY2

Occasionally, practices are not using practice management software. In these cases the recommended patient data entry protocol is to enter the owner name in the name field and the pet name in the patient ID field.

Example: Name SMITH JOE
ID FLUFFY

Use all capital letters in patient data entry and use no punctuation. It is important to understand the DICOM viewing software (eFilm) uses the patient ID field as the primary data sort field. Consistent entry of patient data allows proper use of the features in the PACS software (Fusion) and DICOM viewing software (eFilm), i.e., routing rules and thumbnail feature.

Appendix A: Recommended Small Animal Patient Data Entry Protocol *(continued)*

Identification of Multiple Practices — Sharing the Same RapidStart™ DR System

In some instances multiple practices may co-exist in the same building and be sharing a single RapidStart™ DR system. The following is a protocol to help identify images.

In most cases the individual practices are using their own numbering system. Placing the first letter of the practice specialty in the front of the patient identification number will prevent overlapping patient ID numbers.

Example: Internal medicine – I1000
Surgery – S1000
Emergency – E1000

In most cases each of the practices that share the RapidStart™ DR system will want their name in the image annotation. The recommended protocol for this is as follows:

1. Enter the name of the practice that purchased the system in the institution field in study info.
2. Enable a free field in study info and set it to essential. Enter the names of each of the additional practices using the system in the drop down menu of the free field
3. Add Institution and Free fields to annotation #2 (Study Date Time) in Annotation in Administrator Setup

Consistent Entry of Doctor Names in Physician Field

Doctor names entered in the Physician Field will appear on the x-ray images and should be entered exactly as they appear on business cards or practice letterhead. Additional credentials can be included based on practice preference, i.e., ACVS, etc.

Example: William Jones, DVM
Jane Smith, VMD

Enable Physician Tab in Study Info

System > SetUp Menu > Administrator Setup > Study Info
Toggle DISABLE to ENABLE
Toggle OPTION to ESSENTIAL
Select input and enter doctor names as in above example

Add the Physician in Annotation Field

System > SetUp Menu > System Setup > Annotation
Add Physician to annotation #2 under the practice name
Click on annotation #2 field
Place cursor in line under practice name
Click on physician button

Appendix A: Recommended Small Animal Patient Data Entry Protocol *(continued)*

Consistent Patient Data Entry of Species and Sex

Enable a Free Field in Study Info and Set it to Essential

Enter the following choices:

canine	canine neutered	canine spayed
feline	feline neutered	feline spayed
avian	exotic	

Include a space when entering canine, canine neutered, etc. in order to keep the annotation from running together. An example of the end result is: F canine spayed

Add Free Field To Annotation #1 (Patient Info.)
After %Sex% In Annotation In Administrator Setup

Consistent Patient Data Entry for PENNHIP and OFA

Activate Free Annotation

System > setup menu > system setup > annotation
In the upper right corner select free annotation, toggle disable to enable.
Select font and change size from 72 to 28. Leave font style on swiss721 BT.

Add Free Annotation to Image

This information must be added to each individual image that is being submitted in the QA screen after exposure is made.

Select **QA** in the preview image screen
Select the **annotation tab** in the QA screen
Select **Free annotation** at the top (takes a second to load)
Select add text
Select the text square and add the required information.

Example: AKC: 123456, Santa's Little Helper, Micr: 8675309 (the practice staff should know what information needs entered to meet PENNHIP or OFA requirements)

Select **OK**
Select the screen where annotation should appear, preferably near the other annotation information. There will be position arrows to reposition the annotation if needed.
Select **OK** and **EXIT**
Magnify the image to verify the annotation is properly located.

Appendix B:
RapidStart™ and Accessories

Acquisition Station

The RapidStart™ acquisition station consists of the touch screen display and shuttle box which contains the operating software, and local image storage. It delivers superior diagnostic content and image processing capabilities.

Figure B-1: RapidStart™

Cables

Figure B-2: Cross-over Cable

The cross-over cable transfers the images from the sensor panel to the acquisition station.

Figure B-3: Network Cable

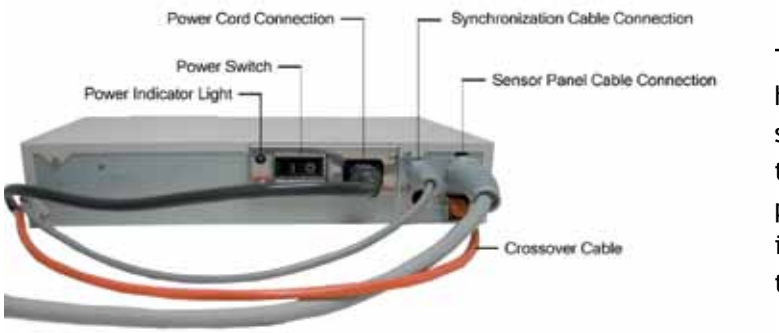
The network cable connects the acquisition station to the network port (or switch). It relays information to ReadyView™ diagnostic workstations, ReadyStore™ multi-modality PACS image management systems, Remote web-based image management portals, and medical-grade dry film printers.

Figure B-4: Synchronization Cable

The synchronization cable connects the synchronization box to the acquisition station. It relays a signal to the acquisition station to open the sensor panel for radiation exposure.

Appendix B: RapidStart™ and Accessories *(continued)*

Panel Power Supply Box



The panel power supply box has multiple functions including supplying power to the panel, transferring control signals to the panel, and transferring the digital image data from the sensor panel to the acquisition station.

Figure B-5: Panel Power Supply Box

Sensor Panel

The sensor panel is a lightweight direct capture digital X-ray panel. The sensor panel enables the capture of high-quality images from any X-ray generator.

Figure B-6: Sensor Panel

Synchronization Box

The synchronization box is mounted to the X-Ray generator. It sends a signal to the acquisition station to open the sensor panel for radiation exposure.

Figure B-7: Synchronization Box

Appendix C: Specifications

Intended Purpose: Veterinary Radiography

(not intended for human use)

Specifications

Sensor Unit

Type	Canon Medical CXDI-50G Sensor
Imaging Area	35.6 cm x 43.2 cm (14” x 17”)
Pixel Pitch	160 x 160 microns
Pixel Array	2,208 x 2,688 pixels (5,935,104 pixels)
Grayscale	12 bit (4,096 levels)
Weight	4.8 kg (10.6 lbs)
Dimensions	50.6 cm (19.9”) wide x 49.0 cm (19.3”) high x 2.3 cm (0.9”) deep

System

Controls Application	Flat panel touch screen display Veterinary-specific anatomical view selection and acquisition optimization
Image Processing Time	Preview: approximately 4 seconds after exposure Total time: approximately 10 seconds per image
Data Output	DICOM 3.0 compatible 100 Base T network interface Networks to ReadyView™ diagnostic workstations or ReadyStore™ multi-modality PACS image management systems. AIS web-based image management portal.
Image Storage	Local storage includes (approximately 25,500 images) Long term storage provided by offsite AIS archive.
Voltage	100V/120V, 230/240V (50/60Hz)
Power Consumption	300 VA Maximum
Operating Environment	5-35 °C (41-95 °F) 30-75% RH (non-condensing)

Appendix D: eFilm™ Application

Accessing eFilm

On RapidStart™ Acquisition Station

1. Hold the left mouse button and click the right button to switch from Canon interface to eFilm application.
2. Select **OK** at the log-on screen.
3. The Study Manager page appears displaying all the studies currently stored in the eFilm database.
4. Repeat step 1 to toggle back to Canon interface.

On ReadyView™ Workstation

1. eFilm is loaded in the start menu of all ReadyView™ workstations allowing it to load automatically when the system is booted.
2. If eFilm does not open automatically double-click the eFilm shortcut icon on desktop.
3. Select **OK** at the log-on screen.
4. The Study Manager page appears displaying all the studies currently stored in the eFilm database.

View a Study

1. To open a specific study highlight the study and either double-click or select **View**.
2. To close the study, select the "**X**."

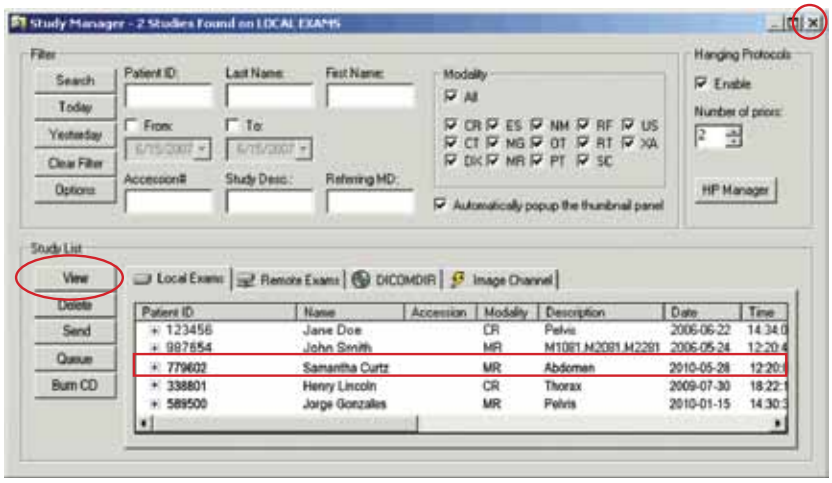


Figure D-1: eFilm Study Manager

Select column title to sort by that data field e.g., 'Patient ID', 'Name'.

Appendix D: eFilm™ Application *(continued)*

Search Study Manager List

Search allows user to search and filter eFilm data.

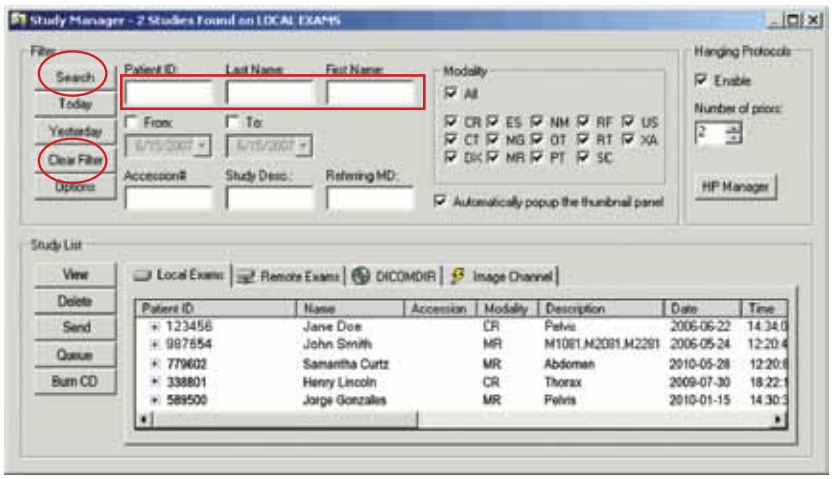


Figure D-2: Select a Study In the Study Manager List

1. Enter search criteria in the appropriate field (e.g., Owner name or Patient ID).
2. Select **Search**.
3. Select **Clear Filter** to start a new search.
4. Enter desired search filters.
   Owners last name.
   Enter full last name or first few letters.
   Click **Search**.
   Displays studies with owner's last name.

   Patient ID.
   Enter patient ID
   Click **Search**.
   Displays all studies for this patient.

Appendix D: eFilm™ Application *(continued)*

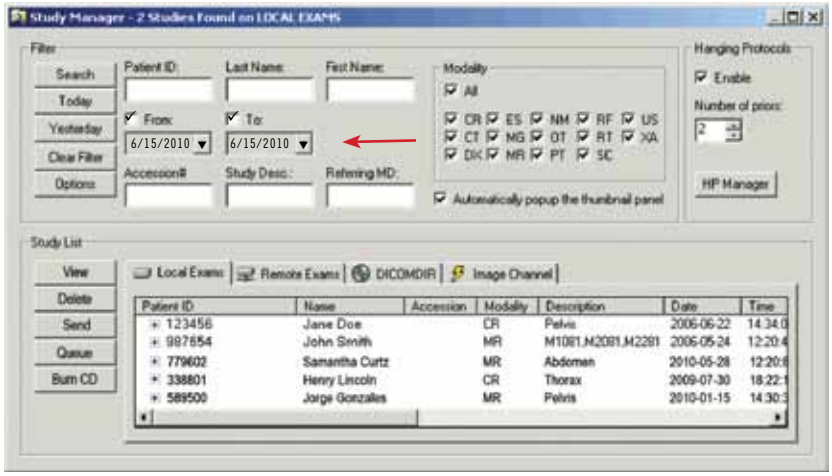


Figure D-3: Filtering by Date

5. Dates.
   Today button: See all studies performed today.
   Yesterday: See all studies performed yesterday.
   Date range:
   Select **From**: check box.
   Select date from drop down arrow list or enter dates manually.
   Repeat for **To**: check box.
   Click **Search**.
   All studies performed within date range are displayed.

If there is data in the search fields, select Clear Filter. If any of the search fields contain entries from a previous search the list will be filtered and the complete eFilm™ database will not display.

Appendix D: eFilm™ Application *(continued)*

Burn CD

Enables user to save selected studies or images to a CD.

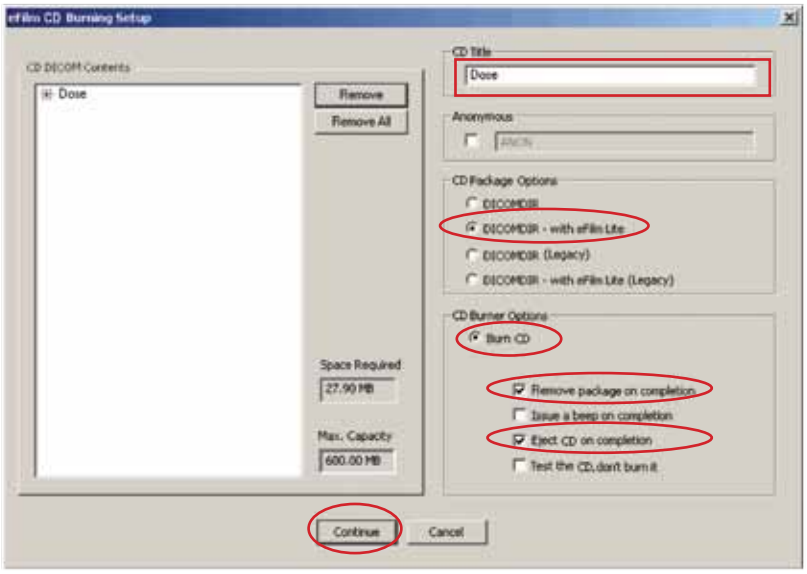


Figure D-5: Burn CD Main Screen

Copy an Entire Study

Select the study in the Study Manager list.*
Select **BURN CD**.
Enter **CD Title** (most cases use the owner or patient name).
Select:
DICOM with eFilm Lite (CD can be used in any computer).
Select **BURN CD**.
Select Remove package on completion.
Select Eject the CD on completion.
Select **Continue** when ready.

Copy Multiple Studies in Sequence

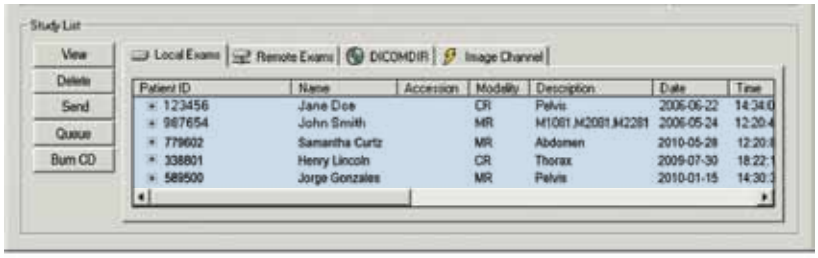


Figure D-6: Copy Studies In Sequence

Hold the <Shift> key.
Click on the first and last study.
Repeat steps to **BURN CD** from above.

Appendix D: eFilm™ Application *(continued)*

Copy Multiple Studies Not in Sequence

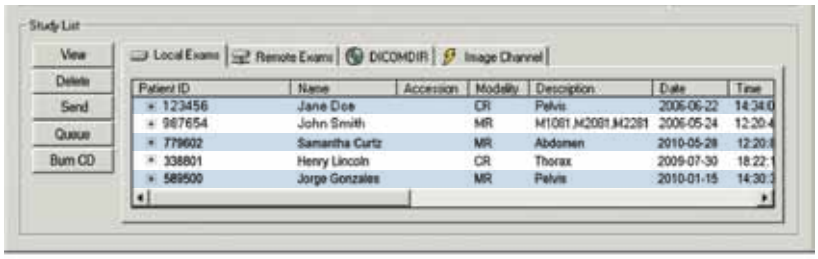


Figure D-7: Copy Studies Not In Sequence

Hold the <Ctrl> key.
Select the studies to be copied.
Repeat steps above above.

Copy Selected Images

Search Study Manager list for desired study.
Open the study.
Select the images to be copied.
Select Utility.
Scroll down to Create CD
Repeat steps above above.

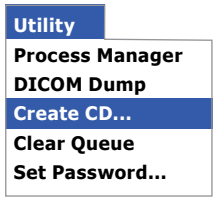


Figure D-8: Copy Selected Images

Don't start the burn CD process when you are ready to go onto another task as other applications are not available during the burn process.

Appendix D: eFilm™ Application *(continued)*

Image Display Tools

Toggle Survey/Explode Mode

Select icon to toggle between survey mode (displays all the images in a study) or a single view (one image in the study).

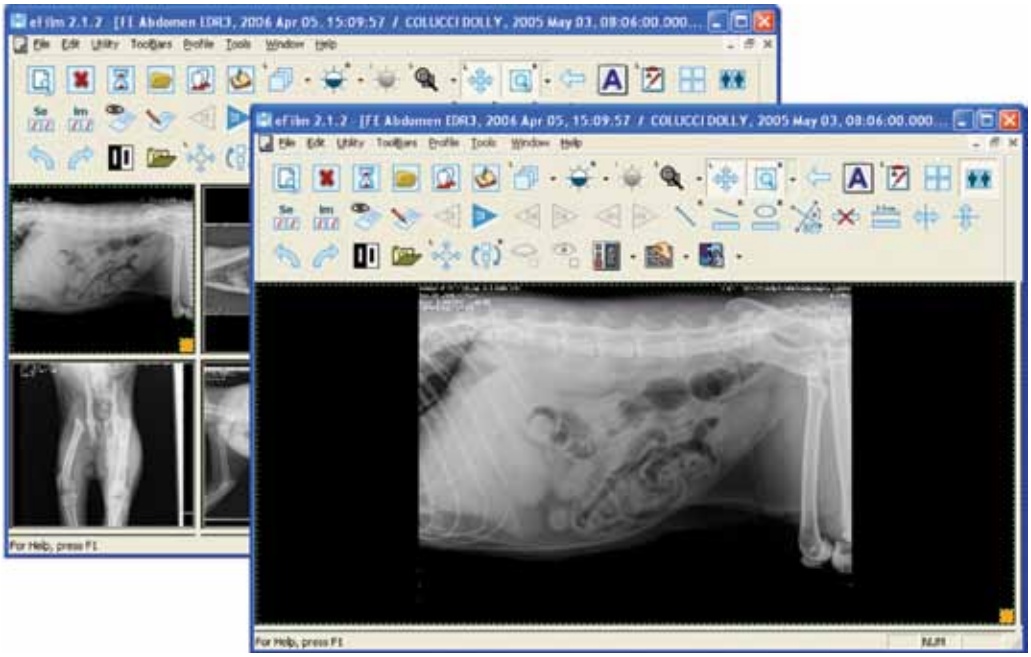


Figure D-9: Toggling Between Views

Window/Level (Right Mouse)

Adjusts the brightness and contrast of selected image.

Click the **Window/Level** icon.

To change image brightness:

Place the cursor over the image.
Hold down the right mouse button.
Move mouse up to darken the image.
Move mouse down to lighten the image.

To change image contrast:

Place the cursor over the image.
Hold down the right mouse button.
Move mouse left to increase the contrast.
Move mouse right to decrease the contrast.

Press F2 on the keyboard to return image to original settings.

Appendix D: eFilm™ Application

Image Display Tools *(continued)*

Magnification (Left Mouse)

Magnifies selected image.

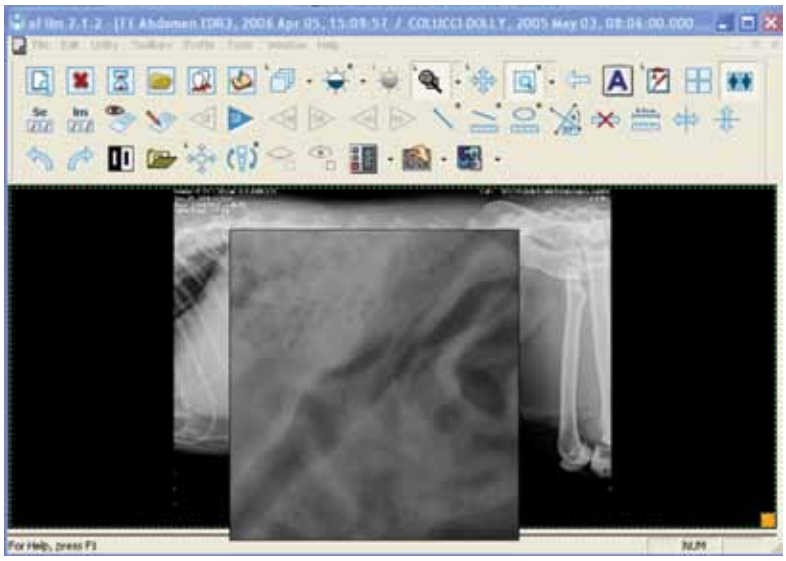


Figure D-10: Magnify ROI

Click the Magnification icon.
Place cursor over the image.
Hold down left mouse button.
Enlarged image appears in expanded window.
Scroll to view other areas of the image.
Release mouse button to return image to original size and window.

Pan (Left mouse) and Zoom (Right mouse)

Moves (Pan), reduces or enlarges (Zoom) the image within the field of view.

To activate Pan:
Click and hold the left mouse button while over the image.
Scroll to move the image around within the field of view.

To activate Zoom:
Click and hold the right mouse button while over the image.
Scroll up to enlarge the image.
Scroll down to reduce the image.
Use the Pan feature to move the image if the area of interest is not visible.
Select large arrow to return image to original magnification.

Appendix D: eFilm™ Application

Image Display Tools *(continued)*

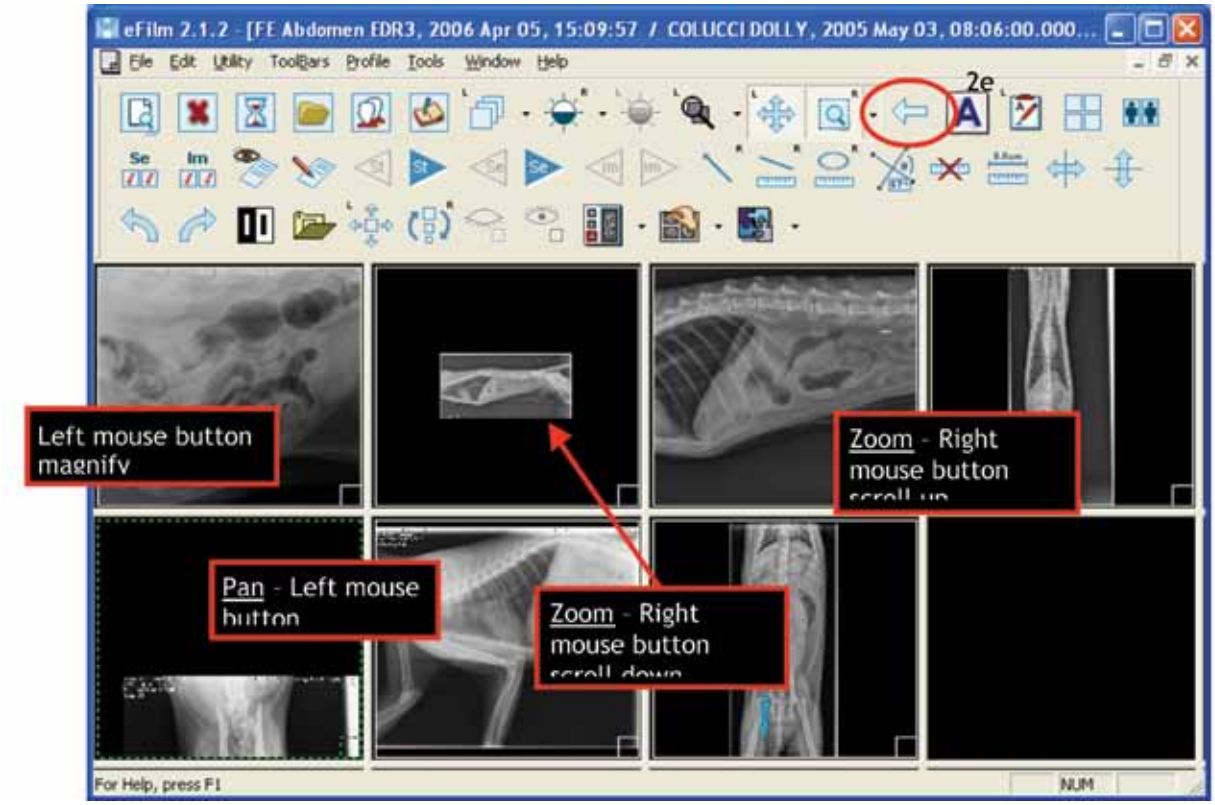


Figure D-11: Pan and Zoom Options

Toggle Overlay

Shows/hides DICOM information.

Select the **Toggle Overlay** icon to show DICOM information.
Select again to toggle off.

Appendix D: eFilm™ Application

Image Display Tools *(continued)*

Add User Annotation (Left Mouse)

Allows user to add annotations to selected image.

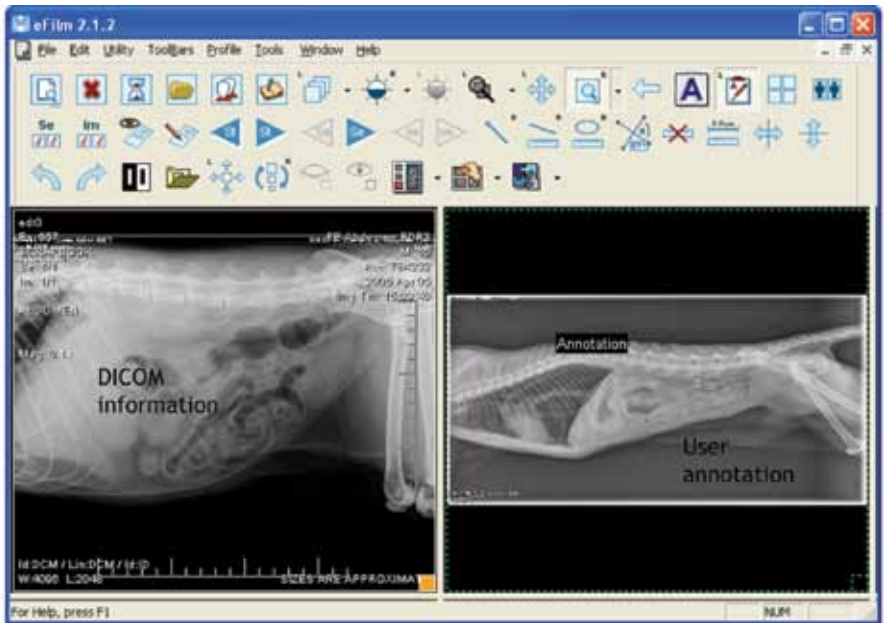


Figure D-12: DICOM Information and User Annotations

Click Add User Annotation icon.
Click on image to create a text box.
Create a scrapbook to retain information.

Appendix D: eFilm™ Application

Image Display Tools *(continued)*

Scrapbook

Allows user to save any information added to an image (i.e., measurements or annotations).

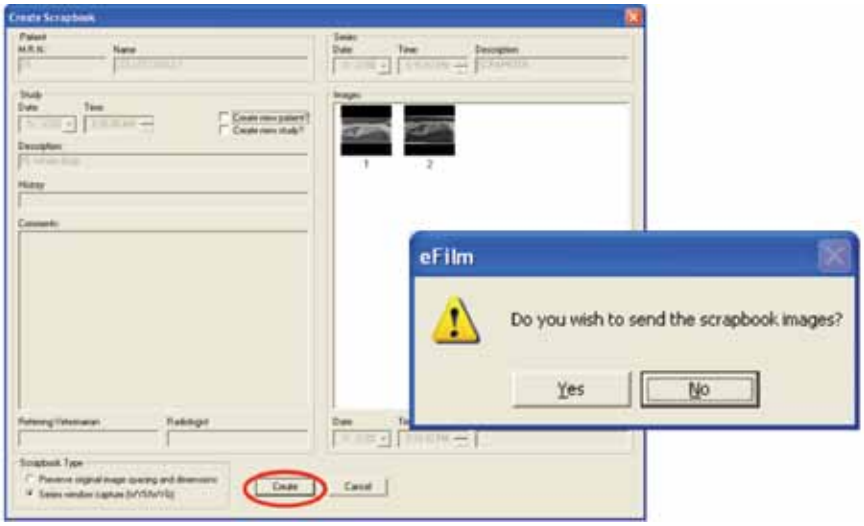


Figure D-13: Creating a Scrapbook

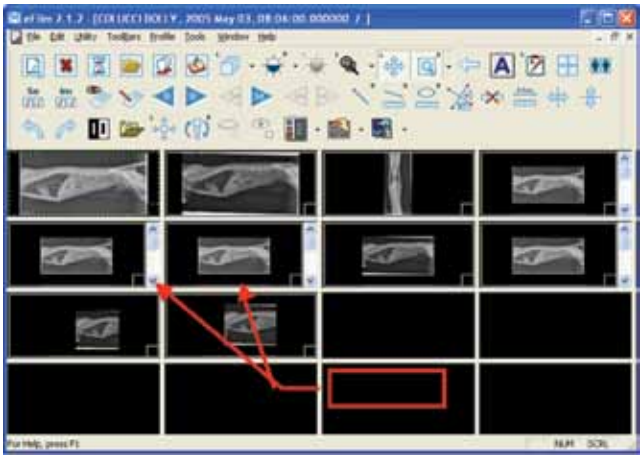


Figure D-14: Scrapbook Images

Select box in lower right corner of images with added information.
Select create scrapbook icon.
Select **create**.
Select **yes** if working with a PACS server to store image on server.
Select **no** to store image in local eFilm database (original DICOM image is not changed).

Original DICOM images can not be modified. All changes must be saved as a scrapbook and stored in the local eFilm™ database.

Appendix D: eFilm™ Application

Image Display Tools *(continued)*

Screen Layout

Displays images in various layouts on the screen.

Select screen layout tool.
On Series side select desired layout pane.
Select **OK**.
Return to the screen layout tool to return to the original layout.

Viewing Study Images

Viewing Previous or Next: Studies or Series

'Previous Study' or 'Next Study'

'Previous Series' or 'Next Series' moves between images in a series/study.

Select either **Previous Study** or **Next Study** to move between studies on the study manager list.

Select **Previous** icon to view image before current image within the series/study.
Select **Next** icon to view image after current image within the series/study.
There are three options for moving between images within a series/study.

Select **previous** or **next** icon.
Move cursor over image, right click mouse and scroll to image you'd like to view.
Use thumbnail panel.

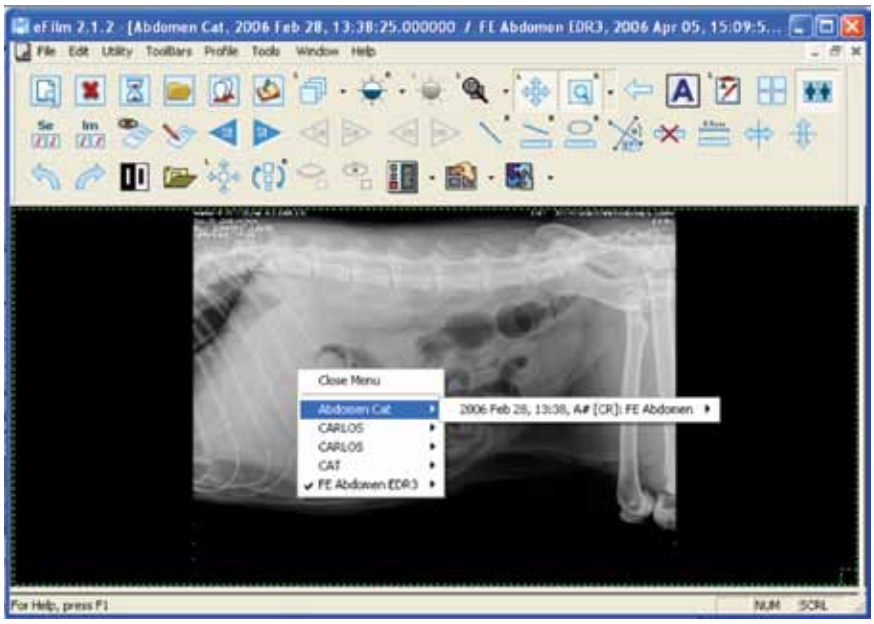


Figure D-15: Viewing a Different Image Using Right Mouse Click

Appendix D: eFilm™ Application

Viewing Study Images *(continued)*

Thumbnail Panel

Viewing a Different Image Using Thumbnail Panel

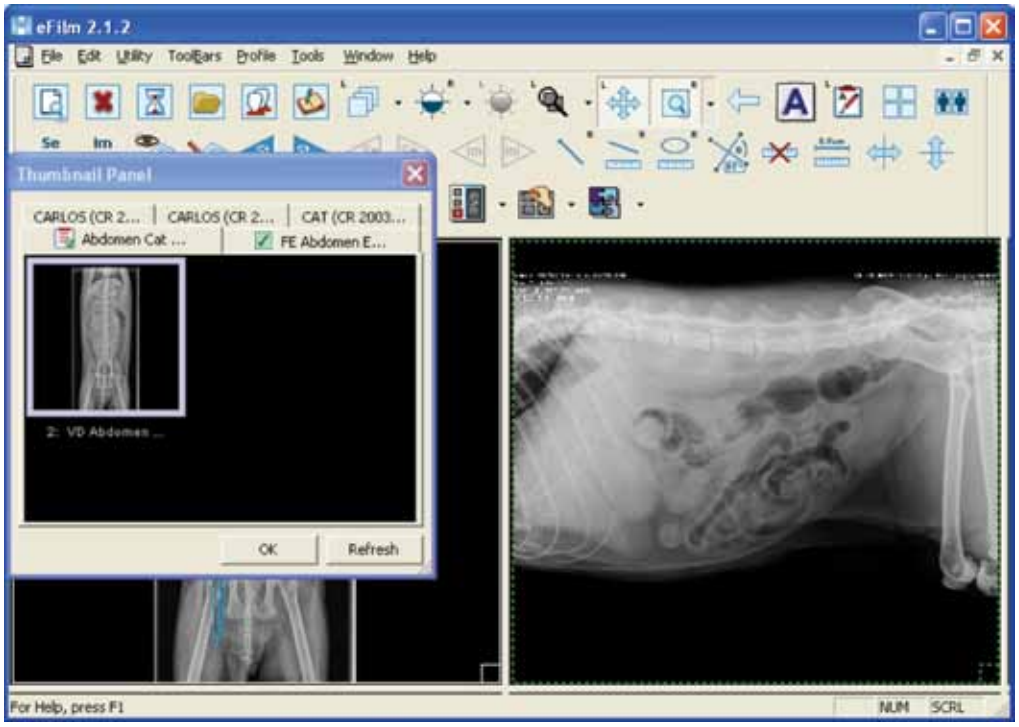


Figure D-16: Viewing a Different Image Using Thumbnail Panel

Features of Thumbnail Panel:

- Tab for every exam performed on that patient.
- Active tab is denoted with a green check box.
- Click and drag to move and resize the window.
- Drag and drop images from thumbnail panel to display panel.
- Click OK or click the "X" to close the thumbnail pane.

Accessing the thumbnail panel:

Select the thumbnail panel tool from the toolbar or

Select Automatically popup the thumbnail panel box on the Study Manager screen.

Compare Studies From Different Dates

From the toolbar click the Screen Layout and select the series layout with the desired number of images you want to compare.

Click OK.

Click and drag the images from the thumbnail panel to the display pane for comparison.

Move between studies by selecting the desired tab in the thumbnail panel.

Appendix D: eFilm™ Application *(continued)*

Image Orientation Tools

Flip Horizontal

Flip Vertical

Rotate 90 Degrees Counter-Clockwise

Rotate 90 Degrees Clockwise

Invert

Reverses colors, black to white and white to black; toggle (annotations will be mirrored).

Measurement Tools

Arrow (Right Mouse)

Draw arrow on image to highlight.

Select Arrow tool.
Right Click near item/area to be highlighted.
Drag arrow point to specific area to be highlighted.
Release mouse.
Enter annotation text if desired.

These are DICOM files and can not be changed. Create a scrapbook of original image to save annotations, see scrapbook.

Appendix D: eFilm™ Application Measurement Tools *(continued)*

Line (Right Mouse)

Draws a line on image to denote dimension.

Draw line.

Select Line tool.
Right click start location for measurement.
Drag to end location for measurement.
Release mouse.

Change measurement (i.e., increase or decrease length)

Select **endpoint**.
Click and hold left mouse button.
Drag to desired location.

Change measurement location (i.e., move entire line without changing length)

Select middle of line.
Drag to desired location.

Show Angles

Draws lines on image and denotes angles.

Select Line tool and Show Angles tool.
Draw two intersecting lines (per Line instructions above).
Release mouse button. Software applies angle.
To relocate annotations, left click to select and drag.

Figure D-17: Measuring Body Part Angles

Appendix D: eFilm™ Application Measurement Tools *(continued)*

Clear Measurement Tool

Delete all measurement annotations

Elliptical Tool

Measure dimensions (e.g., bone cyst)

Calibrate

Calibrate image for magnification factor (if magnification factor is known)

Using Templates

Figure D-18: Image with Ball Phantom

When obtaining the original radiograph, you must place the ball phantom in the collimated beam, parallel to the table and at the level of the bone/joint of interest on all views that templates may be used for.

Display image with ball phantom stacked to exactly the same height above the table as the anatomical area of interest (e.g., hip joint).

Appendix D: eFilm™ Application

Using Templates *(continued)*

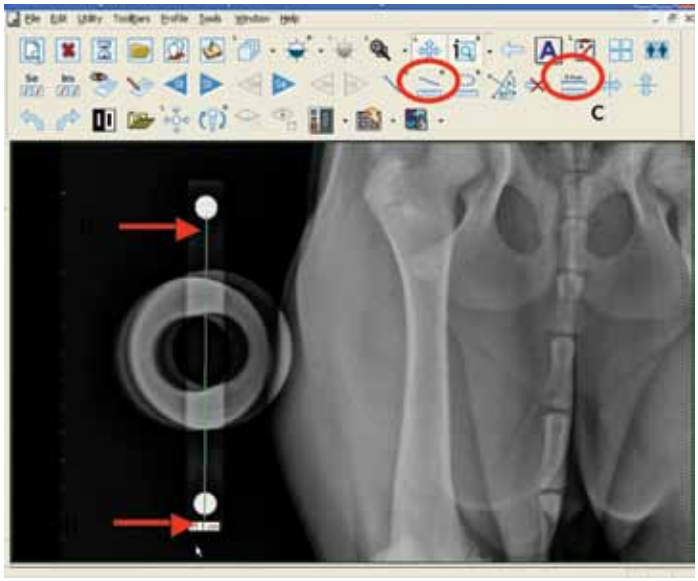


Figure D-19: Zoom Image for Linear Measurement

Calibrate Image to Correct for Magnification Factor

Select zoom tool and zoom image, see *To Activate Zoom page 56*.
Precisely measure distance between balls, see *Line Right Mouse page 63*.
Select linear measurement tool.
Place cursor at the **bottom of one ball**.
Drag to the bottom of other ball.
Distance between balls displays.

In the example shown, we know the two balls are 10cm apart, but it shows 11.1cm, therefore the image needs to be calibrated.

Select calibrate button.
Select Yes when asked "The image is already calibrated. Proceed anyway?"
Enter "**10.0**" cm.
Select **OK**.
Image is now sized, length notation changes to 10.0 cm.

If calibrate button is selected with no line selected system will display "One linear measurement tool must be selected for calibration." Select OK. Select linear measurement (line), then reselect calibrate button.

Appendix D: eFilm™ Application

Using Templates *(continued)*

Add Template to Image

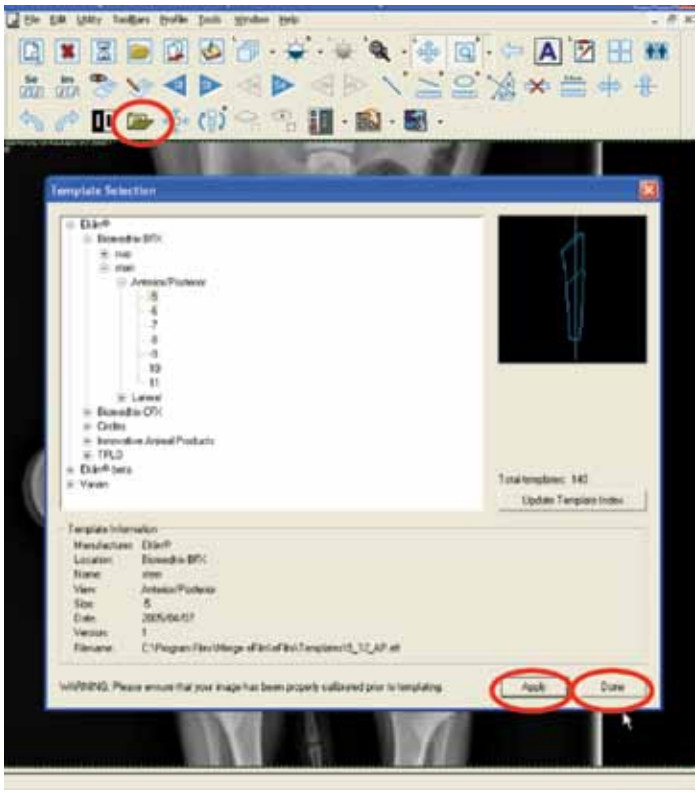


Figure D-20: Selecting a Template

Select add template button.
Template Selection dialog box displays.
Select a **template** (e.g., Biomedtrix BFX, Stem, Anterior/Posterior, -5).
Select **Apply**.
Select **Done**.
Click and drag template to right hip (template is for left hip).
Right click and drag to **"horizontal"**.
Image flips horizontally and is now oriented for right hip.

Appendix D: eFilm™ Application

Using Templates *(continued)*

Size and Position Template

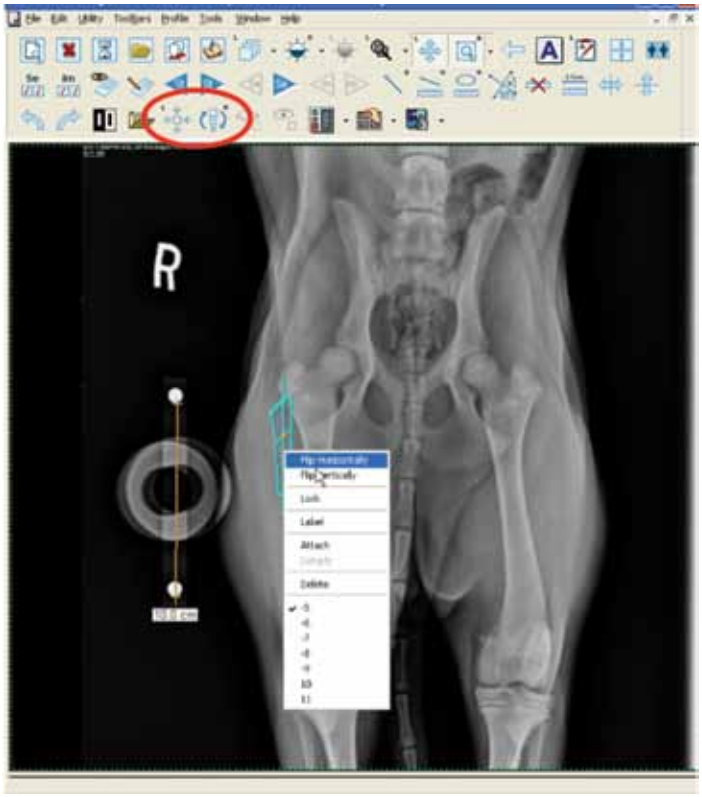


Figure D-21: Change Template Orientation

To Move Template

Select **Zoom** button.
Select Left and Right Template buttons.
Click and hold left mouse button.
Move mouse in all directions (left, right, up, down). Template moves with mouse.

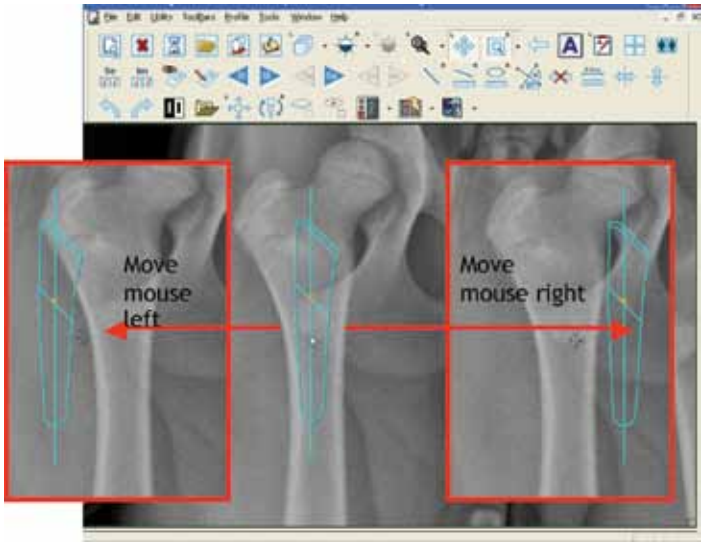


Figure D-22: Position Template

Appendix D: eFilm™ Application

Using Templates *(continued)*

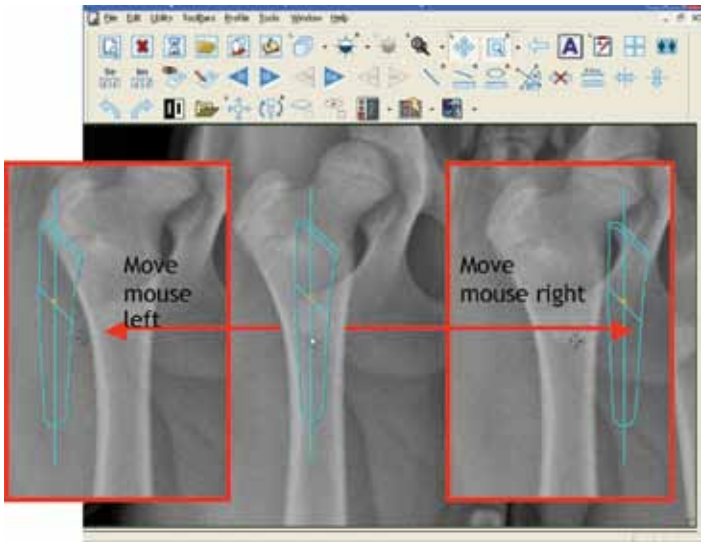


Figure D-23: Position Template

To Change Template Size

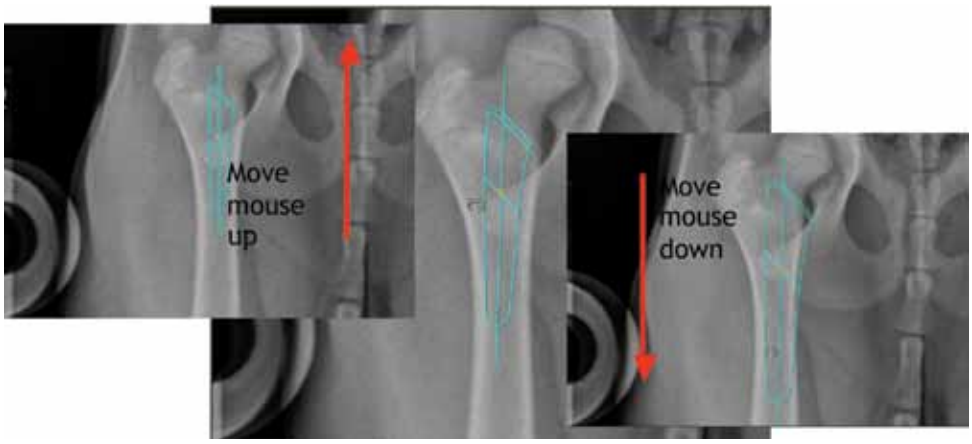


Figure D-24: Change Template Size

Click mouse button.
Move mouse up. Template decreases in size.
Move mouse down. Template increases in size.
Right click on template. Pop-up displays showing current size.
Drag to desired size.

Appendix D: eFilm™ Application

Using Templates *(continued)*

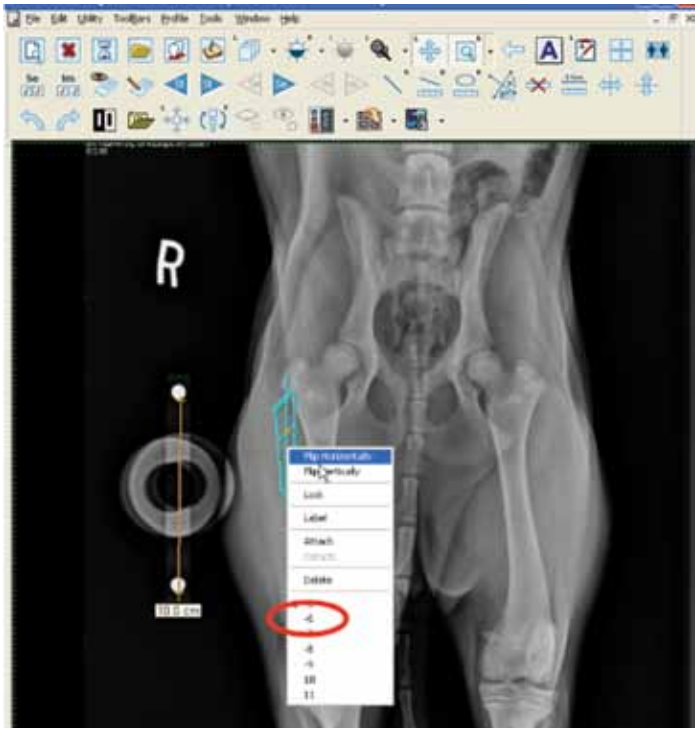


Figure D-25: Current Template Size

Pivot Template

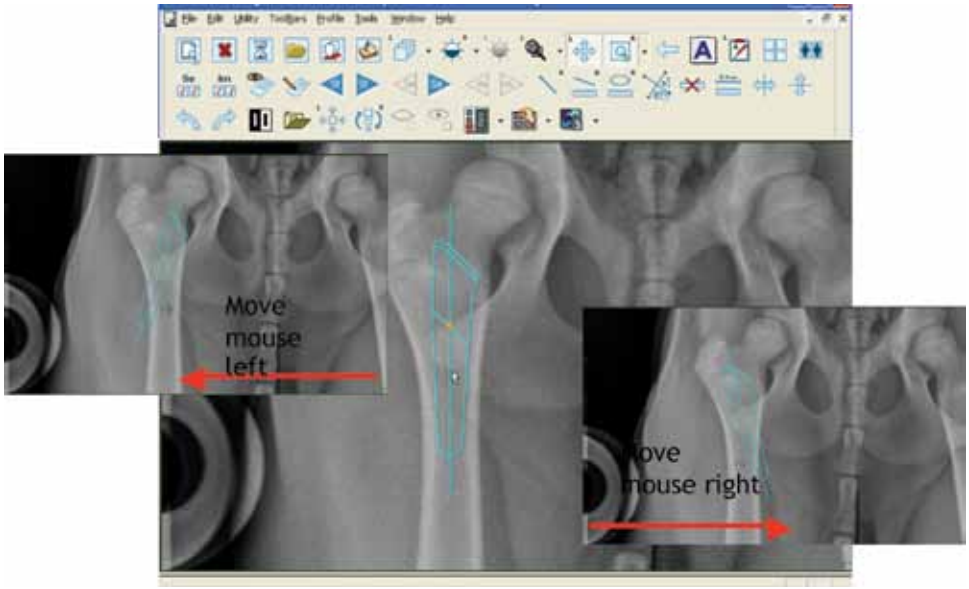


Figure D-26: Pivot Template

Move mouse left to right. Template pivots on axis.

Appendix D: eFilm™ Application

Using Templates *(continued)*

Delete a Template

Select template.
Right click.
Drag to delete.

All templates must be deleted before image can be recalibrated as system calibrates images and templates together.

Recalibrate an Image

Delete all templates, see *delete a template above*.
Follow appropriate calibration steps as detailed in previous instructions.

Appendix E:
Digital Radiography Technique Charts

Small Animal

For Patients over 30cm, double the mAs

Diagnostic REX Value = 300+

[Time (Sec) in Fractions]				
Centimeters	1-10	11-15	16-25	26-30
mA	300	300	300	300
kVp	85	95	110	110
Time (sec)	1/120	1/120	1/120	1/60
mAs	2.5	2.5	2.5	5

Small Animal

For Patients over 30cm, double the mAs

DIAGNOSTIC REX VALUE = 300+

[Time (Sec) in Decimals]				
Centimeters	1-10	11-15	16-25	26-30
mA	300	300	300	300
kVp	85	95	110	110
Time (sec)	0.008	0.008	0.008	0.016
mAs	2.5	2.5	2.5	5

Small Animal

Limited Output Generator

For Patients over 30cm, double the mAs.

Diagnostic REX Value = 300+

[Time (Sec) in Fractions]				
Centimeters	1-10	11-15	16-25	26-30
mA	320	300	250	250
kVp	85	95	110	110
Time (sec)	1/120	1/120	1/120	1/60
mAs	2.5	2.5	2.5	5

Appendix E: Digital Radiography Technique Charts *(continued)*

Small Animal

Limited Output Generator

For Patients over 30cm, double the mAs.

Diagnostic REX Value = 300+

[Time (Sec) in Decimals]				
Centimeters	1-10	11-15	16-25	26-30
mA	320	320	250	250
kVp	85	95	110	110
Time (sec)	0.008	0.008	0.010	0.020
mAs	2.5	2.5	2.5	5

Exotic Animal

For patients greater than 25cm, double the mAs.

kVp may be increased 10% if necessary.

[Time (Sec) in Decimals]				
Centimeters	1-5	6-10	11-15	16-25
mA	100	300	300	300
kVp	65	80	90	110
Time (sec)	0.02	0.01	0.01	0.016
mAs	2	2	3	5

Small Animal

Portable 80/15 Generator

For Patients over 30cm, increase the time in seconds.

Diagnostic REX Value = 300+

[Time (Sec) in Decimals]				
Centimeters	1-5	6-10	11-15	16-25
mA	1.8	2.4	3	5
kVp	80	80	80	80
Time (sec)	0.12	0.16	0.02	0.03

Appendix E: Digital Radiography Technique Charts *(continued)*

Small Animal

Portable 90/30 Generator

For Patients over 30cm, increase the time in seconds.

Diagnostic REX Value = 300+

[Time (Sec) in Decimals]				
Centimeters	1-10	11-15	16-25	26-30
mAs	1.7	2.4	3.6	5
kVp	80	80	90	90
Time (sec)	0.06	0.08	0.18	0.25

Small Animal

Portable 90/30 Generator

For Patients over 30cm, increase the time in seconds.

Diagnostic REX Value = 300+

[Time (Sec) in Decimals]				
Centimeters	1-10	11-15	16-25	26-30
mAs	1	1.6	2	4
kVp	90	90	100	100
Time (sec)	0.05	0.08	0.10	0.20

Appendix F: Technical Support

Shipping Address

Sound-Eklin™

5817 Dryden Place, Suite 101

Carlsbad, California 92008

USA

Technical Support

Office hours: Weekdays 8:00 A.M. — 5:00 P.M. Pacific Time

Emergency 24-hour support is available.

Telephone: 800-268-5354 option 3

Website

www.soundeklin.com

Sound-Eklin™ Technical Support
5817 Dryden Place, Suite 101
Carlsbad, California 92008 USA

toll free: 800.268.5354 option 3
phone: 760.918.9626
fax: 760.918.9620
international: +1.760.918.9626

www.soundeklin.com